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July 1993

BOARDWATCH MAGAZINE

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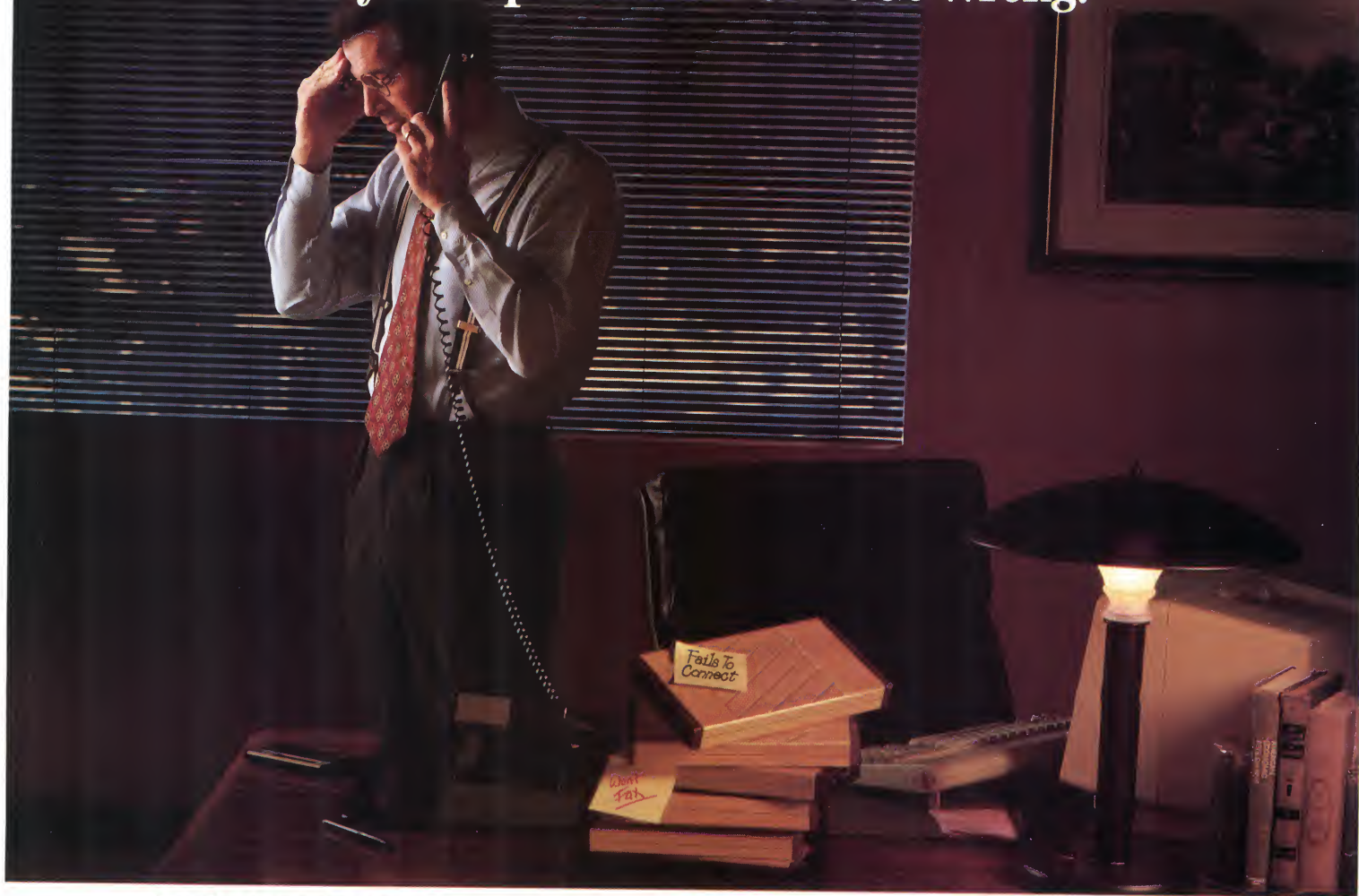
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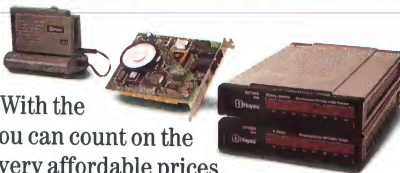
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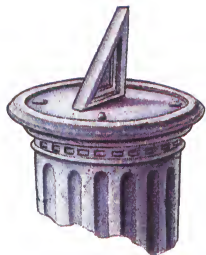
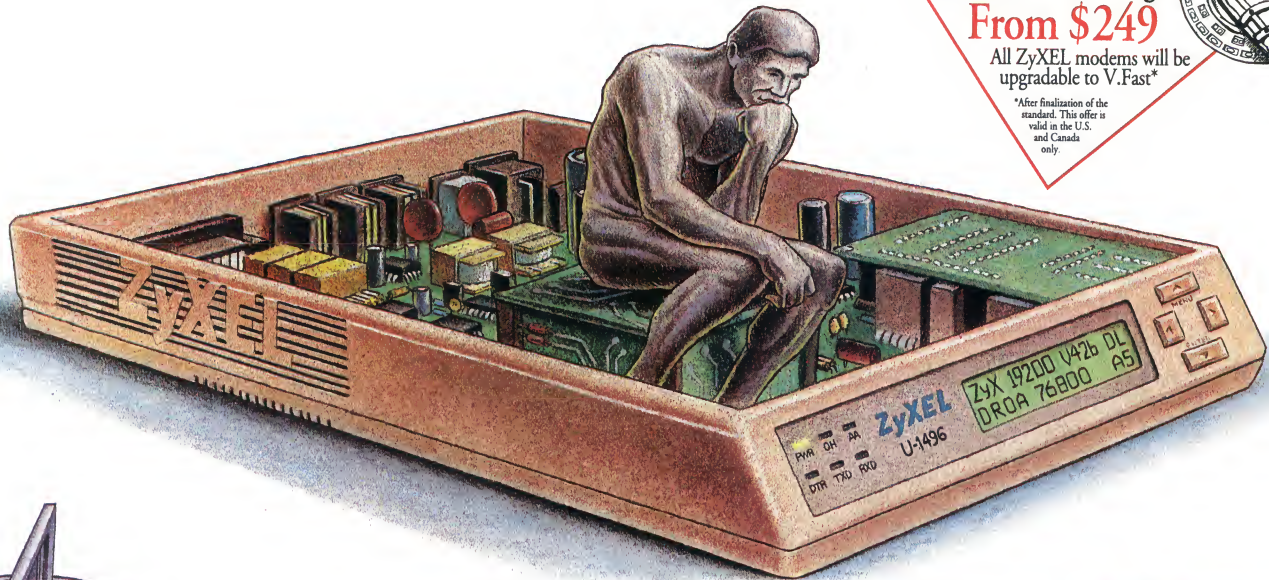
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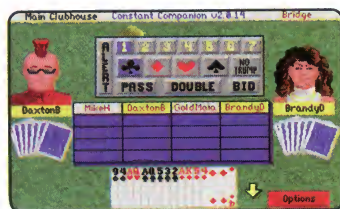
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EDITOR'S NOTES

OF GAMES AND THINGS

I would like to think of Boardwatch as a "real" magazine. It isn't, and I guess I would probably leave for greener pastures if it was, but it is occasionally delicious to contemplate the concept of planning an issue months in advance with a theme, articles, graphics, and watching it all come together as planned. This really is a fantasy. The online world moves and shakes with a speed, that the feigned attempt to keep up with it in a monthly printed publication is probably folly anyway. In our efforts to do so, it always surprises me when an issue nears completion, to learn what the "theme" was in this issue. Without any particular planning, it appears that it is online games this month.

Which is a bit odd since I avoid games for the most part. Oh, I've tried. Most recently I carefully gathered information about a fascinating group of young men down in Texas who are doing a fantastic job of programming some very engaging games. They're called Apogee Software and the last time I asked, they were doing about \$300K per month with Shareware games. I spoke with the actual programmers, got a couple of review copies of their games, and intended to write on the topic.

On return to Denver, I loaded their very popular Castle Wolfenstein on my trusty, if aging 33 MHz 486 machine. The game was very real. If I moved the mouse to the left, my view of the room moved to the left. If I moved it to the right, the room swam to the right. On my machine the motion was very quick, and very smooth. Sure, I shot my share of Nazi's, but soon a sweat broke out across the brow, a funny taste filled my mouth, and despite four years on an aircraft carrier, the unmistakable queasiness of motion sickness began to tug at me quite insistently.

I quit playing the game for a few minutes and got a cup of coffee. I started to feel better, and went back to play it again. Within just a couple of minutes

I was ready to paint the NEC MultiSync with a kind of colorful collage of my own - mostly reminiscent of lunch.

I had other misadventures years ago. The early video games may have been crude, but I was apparently cruder. I would fire a game up on the old C-64 and when I looked up, it would be three days later. There was something empty about three days missing from your life with nothing but dead alien invaders to show for it.

But the real heart of my "disconnect"



from games was over Chess. When I was a very young man, we had an attempted college student name Harold board with us for the semester or perhaps half of a second one it took him to discover his true talents lied elsewhere. At age seven, I became good friends with Harold, largely owing to our similar intellectual development. Harold had a chess board and fancied that if he could learn the game, things would go better for him. Perhaps it might have. In the process, he taught me to play, and I fell in love with the game. For years I played at every opportunity. While I fancied myself somewhat accomplished at it, it's a game that's played on many levels and there is always someone a bit more practiced. I won some, and lost some, and continued to play more or less casually into adulthood.

Some ten years ago I was still playing a bit now and then. A friend and I discovered a tavern with a beautiful large wooden chess set and a pretty good English Ale. And we were wont to play of an evening.



It was about that time that someone taught a computer to play chess. I dabbled with a game for the Apple II, and then encountered really a pretty good one that ran on the Commodore-64. Since the computer is always a willing partner, I began playing against the PC.

What I discovered went beyond mere electronic masturbation. The computer played chess very differently from people. The mathematics were all there, in fact the computer could often beat me. But the game was entirely different. I could battle for 30 minutes to go up a single piece, or gain a single key vantage point. At every turn it very logically tried to thwart my efforts. But if I really worked at it, I could gain the edge nearly every time and at every level.

But something was missing. After a 30 minute battle, with the piece taken or the position secured, the computer didn't panic, it didn't "cave", it didn't have to regroup. No panic counterattacks, anger, frustration, or lapse. It was instantly renewing the game taking precise logical advantage of its current position. It was as if the game were started anew, one piece down. Win that piece, it started anew - another piece down. It would battle to the last pawn, one square at a time. It was relentless even in loss.

After a few hundred games, it finally dawned on me that there was nobody home. The computer was playing a superb game, but the heart of it was entirely devoid of life, of emotion. It didn't care it lost. It didn't celebrate victories large or small. It was starkly devoid of even the faintest glimmer or spark of warmth. Entirely cold. The computer was dead.

I don't know what I expected. But somehow it wasn't that. Chess can appear to lend itself to this mathematical precision. But that's not what chess is. It's not even a simulation of chess. It is a mathematical parody of chess. And I actually felt foolish for spending all that time with it. The experience not only soured me on computer games, but I don't guess I've played chess since.

The hot number in this issue revolves around multi-player games. These are computer mediated games with the people put back in. You can play arcade shootem up games, card games, adventure games, and yes, chess, online any time of the day or night, just like playing the computer, but you are actually playing against other human beings at the other end of the line. You can even chat with them in most cases while you play. It may be that the graphics are improving, the speed is improving, and the virtual reality valhalla is at hand. But, while I think this is the beginning of a new revival in gaming, the critical piece that has been missing is people. When you can sit in your own living room, bring your own chips, but still play poker with your five buddies spread across four states, it becomes fun again. With a little dramamine, I think I can ante into that.

Jack Rickard
Editor and Publisher

LETTERS TO THE EDITOR

Address Correspondence to LETTERS TO THE EDITOR, Boardwatch Magazine, 5970 South Vivian Street, Littleton, CO 80127, or by e-mail to letters@boardwatch.com

Dear Boardwatch,

In your Internet Notes of your March Issue you say "The system runs on a 14 processor Tandem CLX minicomputer with over 1500 public terminals, 16 dialup lines operating at 2400 bps at (303) 758-1551 and free access via Internet telnet login at pac.carl.org or 192.54.81.128". I had to read most of it three or four times to realize that I

couldn't access these resources via Internet.

Please remember we don't all live in Colorado.

Dan Westlake
SMALL1@UTKVX.UTCC.UTK.EDU

Dan:

Actually, I'm going to guess about 98% of us don't. But you may want to read it once more through. Telnet pac.carl.org or Telnet 192.54.81.128 pretty much gets you there from any place with wires - and from whatever continent you prefer.

Jack Rickard

Jack:

Good intentions don't count! I've intended to write several times. Finally had enough to say I guess. Brief intro: I run two 16-line DLX 5.5 BBS systems in Minneapolis. I am converting from DLX to TBBS and excited about the potential! I have been running multi-line BBS systems for the past 6 years. I've been a Boardwatch reader the past two years.

Thanks for the magazine. I watch for it and read it cover to cover each month. Your style is refreshing. The Lance Rose column on the Georgia sysop (April) was interesting. I'm removing X-type gifs from my BBS. This has provoked discussion. I mentioned this incident and received the attached e-mail. I though you (and Lance) may find it of interest.

I thoroughly enjoyed last year's ONE BBSCON! I came away with more ideas, contacts, merchandise and ideas than I ever imagined. Thanks for the vision to make it happen. This year's convention has posed a dilemma however.

OUTlines BBS is for the gay community. While I don't march, don't carry a purse and question the value of boycotts, the location is a sensitive issue for many. I know sysops that won't (or feel they can't) attend because of the location. I'm not a political animal and a political statement is not my intent. My

goal is to grow my systems so I can leave corporate life. I feel ONE BBSCON essential to that effort!

Minnesota just added gays to the state's human rights amendment. The Minneapolis city council has a "ban on travel" to Colorado for city employees. I want (need) to network with peer systems. This weekend will be the largest March on Washington ever. Where does all this leave a quiet shy struggling sysop like me?

I'll attend. I've already made room reservations and paid my fee. I'll keep my attendance quite from users and peers. I really don't expect any action from you. I can appreciate your position. I do believe you to be a fair person and I wanted to share this perspective with you.

Respectfully,

Terry Sovil.

Terry:

I strain to view the world from that perspective, and given what you tell me, it looks like a very complicated one to me. It's difficult to put myself in your position, because most organized/activist groups, for whatever purpose, strike me with a chord of humor, and a touch of disdain.

I believe in individuals - not groups. I suppose at a visceral level I actually associate group behavior with cowardice, though I'm not certain why. Whenever a group forms, it is usually to the detriment of an individual some where, and it usually forms from mutual fears that in some magic way are dispelled by "groupdom." If we have meetings, boycotts, et al, we will be strong. Most of the "ugly" things I've seen of humanity come from groups, and most of the moving heroism, charity, or compassion seems to come from individuals. As a result, I'm not too sympathetic to groups organized to accomplish anything. And I generally dismiss them out of hand after extracting whatever humor/entertainment value they may contain.

Admittedly I oversimplify life, and life seems to let me get away with it. But for

many, the political and social scenario you paint is probably very real, very complicated, and very hard to deal with. I wish you success in a complicated world.

I suppose ONE BBSCON is a group. It forms for three days. It has no purpose except to celebrate the online creation, swap technical and business tips, and allow everyone to see across the fence to other applications, other success stories, and even other failures. Perhaps review our history a bit. It is intended as an annual cross pollination of the online community, to battle the Balkanization that seems to occur. And I would hope that mutual respect for individuals and their contribution to the online community as individuals is what is celebrated. Your sexuality isn't an issue, and I would prefer it not be one. We will likewise deal poorly with the economy, the plight of the homeless, and the environment. We probably will deal with sex, but more on the level of how to deal with x-rated GIF images.

Colorado has been ill served by events of the past year. I have found it to be one of the more tolerant areas of the world in which to live, which is one of the reasons I live here. And the disparity between the picture of Colorado I see emerging from my TV and the picture I see out my window is at least entertaining. There is a group within our local government bent on destroying families. And there is a group down south that is anti-gay. But understand that out of a state with a 3 million plus population, BOTH groups together couldn't fill a Denny's restaurant. Most of the people here tend to be a little on the individualistic side as well.

I find it unfortunate that you can be openly gay, but have to attend a technical exposition "in the closet." I can assure you that you will be welcomed at ONE BBSCON this year as last, and treated with respect as a BBS operator, which in our "group" such as it is, is what you are. But I'm sure there are others that face the same decision, and I can imagine it is not an easy one. All we can do is hold the convention, and try to make sure that all those that come leave with a bit more than they brought. Those that stay home, stay home, and I hope

they gain whatever it is they are after thereby.

Jack Rickard

Hi Jack.

Just checked out the April 93 boardwatch.. not bad! a lot of useful information packed into a well-put-together magazine, albeit traditional.. (3-columns standard typefaces, etc). but the national bbs listing is nice (I like the horizontal lay-out)..

I was wondering if you would consider devoting more pages to Internet stuff and Internet related message bases/irc channels/telnet and FTP stuff.. I'm sure the 10-15 million Internet users out there would appreciate it, as would I.. I really liked Kevin Savetz' article on the Oracle; I just checked it out today and am awaiting a response.. Few magazines are able to discuss something and have the reader go out and do it right after reading about it, but this one has some practical things in it..

Anyway, keep up the good work, and I hope you consider my suggestion.

Ciao for now.
-Jeremy Presner-
jd_pres@pavo.concordia.ca

Dear Jeremy:

As you can see, we're getting a lot of mail about what we ought to be covering more of. But the Internet certainly has my attention these days, and I think you can count on more coverage of it as we go along. We have a pretty neat piece on a NASA Shuttle photo database in this issue.

I'm going to guess there are a little over 4 million people actually ON the Internet with sufficient IP connectivity to do telnet and ftp. Internet people have a habit of subsuming everything they touch when touting statistics. But it is a growing force that I think holds the seed for a future of common connectivity. And we'll be covering it in some detail. One of our main goals with each story is for our readers to be able to go contact the service and find out for themselves.

Jack Rickard

Jack:

I really enjoy reading your magazine, but I see one major thing that it lacks: Product Comparisons. I would think that a magazine about BBS's and BBSing would have modem comparisons, BBS software comparisons or something similar. Could you please explain to this new boardwatch'er why you don't feature product comparisons?

Max Campos
SysOp Sherwood Forest BBS
Data/Fax (713)879-6073

Hello Jack,

Back again, after that keyboard slip with spastic fingers... No metaphysical ravings this time... just a request for an article in Boardwatch to be written by you. How about a comparative review of nearly all BBS packages itemizing breadth of features, stability under fire, ease of configuration, ease of customization by either programmer types or those without such skills, etc. Perhaps such data could be arranged in tabular format and therefore would not take too many pages. A bit of prose though-why did you choose TBBS over PC Board for example for the Boardwatch BBS? Etc.

Your continued editorial comments about harassment of BBS activities and constitutional rights to free speech and free expression go right to the heart of the matter. Keep it up. I do believe the constitution supports the concept that "sticks and stones will break thy bones but words will never harm thee"; outright calls to treason excepted. When the government decides that massaging the psyche of its citizens is a political objective that might contribute to the good of the state, we are seeing the 'dark' side of Marxism disguised in its new clothing of 'politically correct'.

Ben Blumenberg
Reality Software

Dear Ben and Max:

I know a number of computer publications that have made their mark with product comparisons. But they gener-

ally cater to technically unsophisticated corporate types who want easy answers, and the publishers basically make a buck by giving them to them. I'm going to guess the level of readership of Boardwatch magazine wouldn't let me get away with it.

Product comparisons are brutally hard work when done right, and so generally it isn't. Any one person, or team, that reviews a series of programs does so with a bias toward that with which they are familiar. Oh, you can spice up an article with some gratuitous fair sounding statements, but that doesn't really hide the problem except from the most naive readers. And at that, most reviews you read are of fairly homogeneous categories - printer comparisons, word processors, spreadsheets, DOS utilities.

But aside from personal view of comparisons as a journalistic scam, there are several reasons we just don't do them. For one, they are tedious and lengthy. If I'm bored, I assume my readers are.

Secondly, BBS software very closely approximates an online operating system. What it does, and how it does it, is to a large degree a function of the philosophy of the designer - what he thought it ought to do. We don't yet have the common expectations as we do of what word processors should do, what spreadsheets should do, or what database programs should do. A BBS system that is quite the thing for running a successful chat BBS, will do many things quite differently from one designed as a shareware library. Some offer excellent compatibility for LANs, which can be a very legitimate need. Others barely tolerate their presence. One system may be just the thing for FidoNet connectivity, and another sees connectivity as a function of QWK offline mail, or Internet connectivity. If you try to line up all the columns, there are a lot of columns to line up.

Further, BBS systems do not operate in a vacuum. Again, they are somewhat akin to special purpose operating systems. So they tend to have lots of other things designed to work with them. Some of these packages have thirty or more third party entities writing utilities and add-ons. At one point, we had a BBS

package that MOST of what people used it for was provided by a third party developer. If a BBS system does NOT offer FidoNet connectivity at all, but using a third party utility it does it SUPERBLY, then in a product review, does it do it, or does it not?

Then there is the problem that at any given moment, half the packages have just released new versions, and the other half are going to next week. Whatever we might test, it is all different six weeks later.

PC Magazine, arguably one of the best sources of product reviews on the planet, tackled this one nearly two years ago. They did it so badly I was embarrassed for them, but they were so tied up with all the mail about products they hadn't included, had gotten wrong, had the wrong version of, or had otherwise maligned, that I'm sure they didn't notice my discomfort. Essentially, they rushed in where Boardwatch feared to tread. And they can have all of that they want. BBS callers and operators both are a pretty tough crowd to snow.

The real problem is that the choice of BBS software has to be keyed very closely to what you envision doing with a BBS. A system that's lousy at presenting textual information or databases may be just the ticket for file downloads or chat functions. There aren't any easy answers. You have to define what you want to do, and then find the best product to do it. We can note developments, new features, new releases, and new trends.

Why do we use TBBS? There are several pretty important reasons and a couple of fairly trivial ones. It's entirely written in assembly language - and I have a terrible and probably unfair bias in this respect. Originally hailing from the hardware side of the world, I believe that a given microprocessor sports precisely one language - the one the guy that designed the microprocessor designed into it. Everything else is a compromise and usually a fairly artless one at that.

TBBS presents text files very well and very flexibly, and obviously as a publication that homes in on one of our main applications. I find that many things I want a BBS to be somehow always come

around to being a database one way or another. eSoft has a TDBS expansion module that uses dBASE compatible .DBF database files directly, and allows us to write programs in dBASE language and compile them to make them available on multiple lines without a lot of record locking and other housekeeping that dBASE itself requires.

The system can support up to 64 lines from a single 486 machine and allow downloads at 14.4kbps on all 64 at the same time. It is in fact the only software that can do that in the real world and I'm not exactly guessing here. And it can do FidoNet mail sessions on some or all lines while also serving other callers with the normal BBS presentation. As an accident of history, we distribute a few online text products such as Boardwatch Online Edition, Newsbytes, and Gannett's USA Today Newspaper to about 500 bulletin boards world wide. About 80% of them retrieve these files using very automated and unattended FidoNet file request functions and get a might snarley if we aren't up and able when their system does the dirty deed to get the news. We handle several hundred requests for USA Today alone each AM on less than a dozen lines from a single machine that until thirty days ago was a 386SX20 in a broom closet. At 14.4kbps, this 65kbps file takes less than a minute to transfer, and we handle an awful lot of them within a two hour period. We couldn't get a dozen machines on a LAN in the broom closet, and I don't need the aggravation.

Finally, for a system such as ours, I think we need a pretty strong identity. And philosophically, I think the BBS presentation should be a function of the creative design vision of the BBS operator, not the BBS software designer. TBBS lets us design menus in a very flexible hierarchy many levels both deep and wide. It looks like the Boardwatch BBS, and like none other for good or ill.

But I'm a bit fickle, and we'll drop it like a bad habit when we find one better suited to what we're doing.

Jack Rickard

Dear Jack:

Thank you for your letter confirming that I am registered for the ONE BBS CON. Being the first BBS and SysOp of a FidoNet node in the Indian subcontinent, I was keenly interested to attend this conference. As you would appreciate, India is very very far away from the US and being just out of college and only 24 years old, finance for this trip in terms of travel and registration is a major constraint. However, having taken care of that aspect, my main and only worry is a place to stay.

Since I shall be spending most of my time at the conference, basically all I need is a place to sleep at night in a foreign land. Any accommodation on the lines of a student exchange program or YMCA would be acceptable to me. If there is any family close the venue who is willing put me up for the period of the conference that would be just great. This would help me conserve on my scarce monetary resource and give an opportunity for the US family concerned to experience a whole new feeling.

I would be extremely grateful if anyone could help me in this regards.

Suchit Nanda
Suchit Nanda
<100137.772@compuserve.com>

Suchit:

We'll publish your letter and perhaps some Colorado Springs local resident will step forth with an e-mail message to your CompuServe address to offer advice and assistance.

I look forward to meeting you in person at ONE BBSCON this August.

Jack Rickard

Dear Jack,
I read with interest your comments on recycled paper in the latest Boardwatch. You're obviously trying to do the right thing (e.g. use soy inks) without Doing The Right Thing (jumping on a PC bandwagon). So I thought you might be interested in knowing that the Audubon Society — which generally represents the more thoughtful, quiet, intellectual

wing of the environmental movement — has been looking at recycled paper VERY seriously. The last 6 issues of Audubon (which is bimonthly) have each experimented, in part, with a different recycled paper. They've been looking for paper that is high-enough quality for a magazine that lives on photographs, and that is GENUINELY easy on the environment. They've found several choices they seem to think are worthwhile — you might want to check it out.

Nathaniel Borenstein
nsb@thumper.bellcore.com

Nathaniel:

Actually I have a great deal of respect for the Audubon Society - and their publication. And if we could find a recycled paper that actually saved more than it consumed in recycling it, we would certainly consider it.

I don't suppose the Audubon Society sports a BBS?

Jack Rickard

Dear Jack,

I would like to start out by saying what a wonderful magazine you publish. It is my favorite magazine to get in the mail every month! I would like to mention that Don McKneely from Cape Girardeau on KFVS 12 is still doing the weather today. I know you mentioned him a few months ago. And I would also like to tell you that Telegard BBS is no longer supported. The author's name is Marty Polland and he quit upgrading Telegard BBS about a year ago due to circumstances beyond his control.

I was wondering, since you feature different cities in Boardwatch, if you have ever considered featuring St. Louis, MO. St. Louis is home to over 300 BBSs. Most of our local boards are running Shareware programs, and are run by hobbyists. We're a great city, and I hope you would consider us one day. Thanks!

Thom Dismuke
\$murph Land BBS
(314) 741-1984 ZyXEL
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Thom:

It's wonderful to hear that Don McKneely is still on the air at KFVS. He pretty much has to encompass the entire development of television in his own career. And of course, there is the famous Don McKneely career trivia question - "tell us what Homer did?" For Boardwatch readers, Homer farted - about thirty years ago - making local television history. I would imagine Don still hears about it occasionally.

Sorry to hear Telegard is now officially an orphan. We get occasional inquiries regarding the package, and have been a bit lost as to contact information. It doesn't sound like we are going to get any better on that front.

Actually, my first logon to a BBS was in the St. Louis area, and my own first BBS list was of about 16 systems covering St. Louis and Belleville Illinois. I lived in St. John, Missouri, a north county suburb, for five years and served on the city council there for three years. I was in the McDonnell Douglas computer club with several gentlemen who were quite excited about this new Fidonet thing in 1984, but since I was pretty enmeshed in developing software for Commodore 64 and Sinclair ZX-81 computers at the time, felt rather left out of the party. I guess you can tell Ben Baker I'm more or less caught up now.

Check out our list this month. You've got a treasure in Fire Escape and we're pleased to grant your request.

Jack Rickard

Dear Jack:

I was reading your JUNE '93 issue of BoardWatch, and was Somewhat Suprised to read the artical on page 26 in the SOFTWARE section about R.I.P Graphics by TeleGrafix. To start things off I am an "Extremly Happy ROBOBOARD Sysop". The Programming Firm S.H. GRAPHICS located in Ayl., Canada developed a Grapical User Interface (GUI) System for the use of communications.

It started about 2 1/2 years ago when the founder (Seth Hamilton) made a

comment about making a GUI BBS, they laughed at him! Well he didnt take it and sit back down he continued to work on the GUI System despite the negative feedbacks. Well about 1 year later he had developed a functional ProtoType called ROBO Board (ROBO). Today this system is being used in almost every major city around the WORLD. The way ROBO utilizes the GUI is most fasinating in that it accualy Directly Writes 85% of the High Power graphics directly to the screen! The other 15% are ICONS which are Downloaded and Decompressed automatically in less than a second. The ICONS Are roughly .2k in size.

Right now you are probaly thinking this must be slow, well acualy its quite FAST. In most cases its Seemingly faster than ANSI. Well it achives the DIRECT SCREEN WRITES by a Emulation Protocal That Seth Hamilton Developed called ROBO100, which is so used by his FREEWARE terminal called ROBOterm, which can be used for all ASCII, ANSI, and ROBO systems Utilizing X,Y,Z, and Rmodem. Rmodem is somewhat close to Zmodem in efficiency execpt instead of 1k blocks it sends up to 4k blocks, faster than the y Zmodem does. You can Log onto any ROBObord and Not have to manually update the graphics or worry about the last BBS's Graphics at all, ROBO updates them as needed. Also With ROBO the Graphics Drawing Program it uses, ROBODraw, It's very easy for ev the First time artist to use, even for Detailed Graphics. The whole package to get RoboBoard up and Running is Right at \$55. You can see What I am talking about by dialing into the systems Listed Below...

The Robo-Board HQ 1-819-685-0957
BBS 819-682-6670 Voice SysOp/
Author:Seth
Hamilton 3 Nodes Aylmer Quebec,
Canada

BBS++1-619-278-0870 BBS
Sysop:Chris Duke 3 Nodes San Diego,
CA (Phone Number Changing Soon)
InfoExpress BBS 1-804-488-1327
Sysop:Jef Card 3 Nodes Chesapeake,
VA

I did see your "insert" about ROBO at the end of the article. All the BBS's

listed above are at Robo 1.08 at the time this letter was written 5-19-93. Some of ROBO's features are Built In Split Screen Sysop/User Chat, Programmable Menus, Time Bank, Echoil Capabilities, Built In Call Back Verfication, Bullet proof Security, Full Online User Editor With out the user even knowing your Editing him/her, File Marking, File Search, FREE Files, Handles, Single Directory Multi-Line Capabilities, Screen Saver,.I.A.T.I Multi-User Chat (See It As They Type It) With a typematic delay, Support for all DORINFO external "DOORS", Easy To use ROBODRAW, Mouseable Menus, Sound Support, CD-Rom Support, FREEWARE ASCII/ANSI/VGA Terminal, its own Download protocal RMODEM and EXCELENT SUPPORT! Thank you for your Time, and a GREAT magazine.

Jeff Card 62:4200/30@WorldNet.Org
90:1017/1@Robo-Net.Org
5150:1492/5@RoboZone.Org
Chesapeake, Va

Jeff:

I've been looking for an extremely happy sysop. It sounds like ROBOBOARD has everything but a speligng chekcr. Thanks for the contact numbers. We'll have a look soonest.

Jack Rickard

Dear Jack,

Thanks for "being there" and helping me to make my BBS the best I can figure out how to make it. Without Boardwatch, it would still be a two line MajorBBS system with no Fidonet, no Internet, and no BirdNet echos sent around the country, and no fun. Not that it's finished, mind you! Now I'm looking at PIMP for even faster moving of Internet mail.

Just a couple of things I've had on my mind...

In the May 1992 issue, you had an article on "The Profitable Bulletin Board, A Sense of Place." In it you said, "Community is the sum of the individuals there and is crucial to the value of a system. It's worthy of its own

article and we'll cover it in a future issue."

I've been looking for a continuation of this article ever since then! When might you get to it?

I was a little disconcerted with your comments in the June 1993 issue regarding "eco-activists". I guess I had always hoped you had a better view of changing the planet and preserving what's left. I'm not an activist by any means, but I fear that without the activists, nothing would ever get "fixed". You're right though, they do have the same fervor/fever in their eyes that the religious zealots have, and those I have no use for. I like your statement "there is some legitimacy in the old scout edict to leave your campsite at least as clean as you found it." If we all did that, then the eco-activists would have nothing to complain about. Alas, that's not going to happen.

Lastly, I read Boardwatch as my bible. I can live without the monthly list of BBS in other locations, but I couldn't live without your editorial and letters to the editor! You're an inspiration to THIS budding sysop!

Sincerely,

Terry Rune
System Operator Bird Info Network
Arvada, CO

Terry:

Glad to hear you are enjoying some success with the Bird Info Network. You're quite right, we should probably do more on the Profitable BBS, and the community building aspect does seem to be a common thread on the really successful boards. The project has not been entirely dormant, but admittedly not in print.

I've rather artlessly cajoled John Coates and Cliff Figallo into preparing a presentation at ONE BBSCON on precisely this subject. John and Cliff ran *The Whole Earth Electronic Link (THE WELL)* for most all of its formative years. *THE WELL* is virtually a pure play on this community concept. They had no features, no interface, no perfor-

mance, and no file areas on a pretty gruesome UNIXish system that wasn't all that good when it was new. And it's not new. But it did have some very powerful conferencing features that are still hard to equal. And they built the system almost ENTIRELY on community. If any of us can learn to do what they did, with some of the niceties of life common on any bulletin board system available today, it has to be an instant formula for success however you measure it. I rather thought they would be more qualified to detail the nuts and bolts of keeping your mind while dealing with 5000 egos online than I am. Don't miss this session at ONE BBSCON in August.

As to the planet, I think there is a lot left, and I AM a little concerned about changing it. I'm reluctant to. Most of our efforts to play whist with Mother Nature have not historically led to a good outcome. You can shovel cane toads out of Australia or try to deal with Smokey The Bear's problematic legacy in our forest lands if you like. From controlling coyote's (rabbits three feet deep across Texas), to trying African bees in South America, we have an uncanny knack for meaning well. I'm suspicious of "pop" science in general, and frankly utterly horrified at the prostitution of our genuine scientific community with the grant money/politically correct spiral deal with the devil they've either wandered into or been forced into - I can't tell which. But we are approaching ground zero on ever getting an answer again not tainted by political impact and "activist" agenda. I think it will pass, but I fear we'll all wind up knee deep in cane toads with no air conditioning by the time it does.

Jack Rickard

Dear Jack:

Just read your editorial concerning "Clinton White House's new connectivity."

Just because the president can get his message directly to the people without the "filter" of the press may not actually give him more clout. Add to that the ability of the people to have their own discussion group(s) on the "National Information Infrastructure" and the additional "clout" actually goes to the

people.

We are told in school that an *informed electorate* leads to good government. The more the voters actually pay attention and discuss the issues, the better our government. Many feel that the biggest barrier to good government is the short attention span of the voters. That may be so, but the networks rarely give us enough information to draw our own conclusions, only data to support THEIR conclusion (for example, "Dan Quail is a fool, here is what he has done now ...") I think if the voters get the unfiltered promises and opinions of their elected representatives through E-mail, they may actually expect more from their government. For example, are we expecting too much to expect our president to at least try to keep *some* of his campaign promises?

Notice how much time people spend (waste?) discussing sports. Opinion seems well informed. Why? Because everyone is able to watch the entire game and form their own opinion. If they could only watch a portion of the game, and only the portion the sports journalists decided to show them, you would soon notice "the man on the street" losing interest and displaying an uninformed opinion about sports. Unfiltered information is always helpful.

Frankly I have never felt that the network journalists in Washington were doing any favor for me when they provided cynical commentary. We should have term limitations for these folks as much as the congress.

You are right about our electronic wiseacres, George Will, Rush Limbaugh, etc. But we will soon have amateur commentators on the political discussion news conferences who may actually be better. We will broaden the wiseacre bandwidth.

It is my hope that with more complete political data on the "National Information Infrastructure" our government *will improve*. I do not expect this to lead to "government controlled news medium."

John Vindekilde

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John:

I have to agree with a number of your points. The network journalists generally did a poor job, but they were the only viable counterpoint in the information game. I personally find my daily feed from the White House enormously informative, and it is after all what we've said for years should be done. Microtimes Columnist Jim Warren has taken a leading role in calling for open government by electronic means, and I think there is a lot of sentiment in that direction.

I was trying to point out the other, and perhaps non-obvious side of the coin. Diluting the concentration of reporting power by spreading it across more channels and more commentators, while enhancing the information control of the Presidency, does in fact alter the information power structure and to my way of thinking, in favor of the government. And full text pronouncements from the White House do NOT assure an informed electorate. They assure an electorate in receipt of information. Governments, ours included I fear, have routinely and historically presented information to their advantage, and suppressed information that is not. If the "news" is defined by what the President says it is, to a larger degree than we enjoy today, I think that has some drawbacks.

It may have some pluses as well. Certainly if it lifts debate to full text from sound bite level, that would be a positive thing. And for many of those few genetically equipped for the painful process of thought, the availability of this information is an immediate blessing. Counterforces rising from the online proletariat? One can hope so. But broadening the wisecrack bandwidth is precisely the problem. It was the CONCENTRATION of wisecrack power that made it a force for our leaders to contend with - often to their considerable irritation and frustration. I confess I don't really have a clue what it means ultimately. But it will be different. And I thought it worthwhile that during the thrill of electronic access, we consider the ways in which it might in fact be different.

Jack Rickard

Dear Jack:

Three years ago, while flat on my back recovering from an accident, a friend loaned me a Vendex 8088 (Old even then!), manuals, printer, uninstalled internal modem, a Prodigy start-up kit and a copy of the July 1991 BOARDWATCH (That issue became my bible within a few months!). And my life changed forever.

Struggling to grasp the "It's Greek to me" concepts presented in what I now realize were extremely well written manuals, for weeks I lay prone, keyboard on my tummy, monitor crowded on the nightstand, and two cats dive-bombing in and out of everything! Daily I plowed onward, cursing my clumsy fingers and otherwise swift mind as it turned to mush. Forgetting to sleep or eat for weeks on end, I lived primarily on Jelly Bellies, M&M's, cold pizza, and warm Cokes.

Using a salad knife (Who hadda screw-driver?), I cracked the case (See how fast I picked up the jargon?) on the 8088 and following my friend's handwritten instructions, installed the modem. When a tiny screw dropped into the open case, I used a magnet to retrieve it (Whaddid *I* know?). Cranking up the computer, I logged onto Prodigy.

The first month I was thrilled at my discovery! Then, as the realization of their extensive censorship and hidden costs hit me, I turned to that copy of BOARDWATCH to find some other board to logon to.

OHMAGOD! There was TONS of boards listed there. By evening, I had logged onto four and canceled Prodigy! It was heaven as I popped Extra Strength Tylenol for my bad back and typed twenty hours a day, stopping only for physical therapy. My mind was spinning, bombarded with new things every moment! I frantically attempted to stay out of chat long enough to find my way 'round the 32 line systems. I soon had any number of friends from the boards! My back felt lousy, but I was having the time of my life!

Which brings me to today... I have my own 16 line TBBS board, BLAZIN'

BYTES, (818-776-2777) <if that is permitted>, and I am an avid BOARDWATCH fan. Every issue is read and re-read! As a busy sysop I forget to eat and sleep for weeks on end and live primarily on Jelly Bellies, M&M's, cold pizza and warm Cokes (SOME things don't change!). My back still hurts like hell and I should own stock in Tylenol! My mom thinks I'm an "OP-OP," and says "Barbie dear...when are you going to get a REAL job?" (When I don't work my board 20 hours a day, mom!) My two daughters think I finally HAVE learned to speak Greek! GAWD! I LOVE THIS JOB!!!

Thanks to you and your staff for contributing so much to my life and career, Jack. And thanks to the terrific gang of sysops and staff at eSoft for their warm support, too! (Buncha nut-cases, every one!) I'm making my reservations for BBSCON and look forward to meeting all of ya!

Barbara Mallut <aka Blazin' Barb>
Van Nuys, California

P.S. Now WHY do I feel guilty for not having a string of letters, numbers and symbols listed here under my name? Hmmmm....

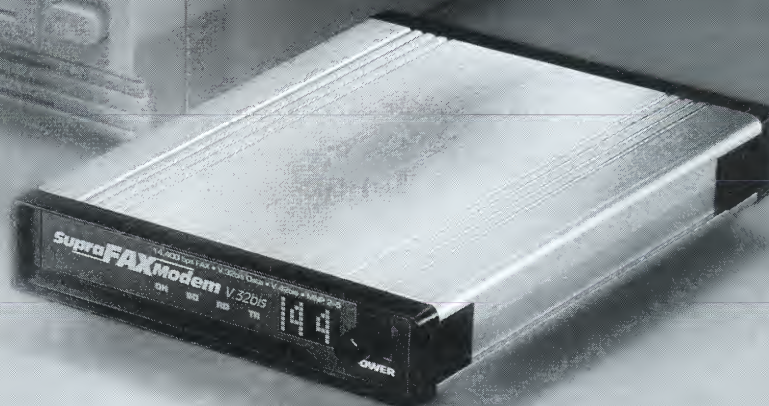
Blazin'Barb@Nuttin'here! <Smile>

Barb:

And there, in seven paragraphs, lies the gist of so many many things I struggle to convey every day of my life. It hasn't really got very much to do with computers, does it Barb? If you can wield a salad knife, that's about all the technical acumen required. It is the injured, and the meek. And the old. And those trapped in dreary jobs they detest. It's the isolated. And the broken. The disillusioned. The cynical. The abandoned and the embittered. The impatient. The creative. The lonely. The intelligent. A spark of contact. A link forged painfully in the night. One. And then two. And then two thousand. And then two million. And now twelve million. Like fireflies in the night winking in and winking out in fiery lances of hidden light spanning continents - perhaps a world. Minds in contact from anywhere and everywhere. Without their broken limbs, their palsy,

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their loneliness, and their assorted damage and detritus of the miles of life. Freed of both geography, and time, they are replaced with joy, and stimulation, and a sense of intellectual and conversational freedom. The walls recede and the sound fades. We are somewhere bigger, and there are others. Lots of others. It is in a most genuine sense a world made over.

I don't know what it means. Faster modems, younger computers, older passwords, and more whiskey - maybe. But it is this change of life, this coming of age that I see repeated with magic a dozen or so times a year - individuals remade by discovery of another world. I can listen to a hundred demand that I cover their 1982 model 12 custom CP/M machine and give it the "respect it deserves," and listen to another hundred vendors demand that I make people call them with money without actually fainting from boredom because somewhere in the piles and piles of what we do, there is a letter from someone who "got it." Yes, I love this job too Blazin' Barb.

And now back to the nuts and bolts. Remind me NOT to stop by for dinner. Jelly Bellies?

We can get you fixed up with a name and funny characters and stop that guilt thing dead in its tracks via an Internet host account from Holonet or Colorado SuperNet and a copy of a software program titled PIMP to hook that 16 line TBBS up to do Internet mail. Finally, I am most pleased to learn we'll meet you in person at ONE BBSCON in August. The world needs more people willing to take this thing head on with nothing more than a salad knife, a concerned mother, and a bottle of Tylenol.

Jack Rickard

TELEBITS

INTERESTING NUMBERS

Theodore Barry & Associates, with Economics and Technology, Inc., recently did a survey of some 1000 residential consumers to determine demand for computers, modems, and commercial online services in New York State. The results are interesting.

With regards to computers, the survey found that 31.0% of those polled currently own a personal computer at home and an additional 16.2% intend to purchase one within the next two years. By 1995, 47.2% of households will have personal computers.

Approximately 14.2% of those polled currently own modems and an additional 8.8% intend to purchase within the next two years. This would indicate that nearly 45.8% of those owning personal computers now have modems.

Some 7.1% of those polled currently use online services and 5.4% intend to add online services within the next two years.

We thought it interesting to apply these numbers to current population data for the United States as a whole. It would appear there are currently 96.5 million households in the United States. This would result in some 29.915 million homes with PCs now, growing to 45.548 million by 1995 - a growth of some 15.5 million households over the next two years.

It would result in some 13.7 million households with modems at home, growing to 22.2 million over the next two years.

BUMPER STICKER: Let's all work for Whirled Peas.



ONE BBSCON '93 - Report from the Front

by Phil Becker

Blowout! There is no other word I know that can describe what happened at ONE BBSCON '92 (and this one understates it a bit). Since recovering from that event last August, everyone who attended has been trying to imagine what ONE BBSCON '93 would be like. Could it possibly be bigger? Could it possibly be better? Could I possibly feel this good about BBSing again? Eight months later the answer is starting to shape up, and it is a resounding yes!

The few complaints we had about ONE BBSCON '92 fell into three categories. 1) We had to turn vendors away - be sure the next one can hold them all. 2) We had to turn people away - be sure the next one can hold them all. 3) The hotel was great, but we were stuck in it for four days - get a location that is near the mountains and let us get outdoors enough to enjoy the beauty of Colorado.

So we set out to fix these "problems". The site for ONE BBSCON '93 is the Broadmoor Hotel at the base of Pike's Peak mountain. This is the most beautiful part of Colorado. Just standing outdoors anywhere in the area makes you feel glad you are alive. We've arranged the show layout to give you ample excuses to walk outside by the

lake, trees, wildlife and mountains all day long as you move between the sessions and the exhibit area.

We nearly tripled the vendor floor space, but that doesn't look like it will be quite enough. Already it is well over 2/3 sold out and we may end up turning vendors away again. We doubled the meeting capacity from 1,000 attendees to 2,000 attendees but it looks like we will sell those slots out again too (if registration follows last year's curve we are headed for over 2,500 who will want to sign up). Jack and I are currently devising the torture methods for the next person who says "those are the kind of problems to have!"

"But is it worth my time and money to come?" you ask. My answer is that frankly, if you have any interest in knowing about the online world and don't attend ONE BBSCON '93, you've blown it. You will miss out on many things you will not be able to learn in the entire following year. There is simply no other way to obtain this much information about the online world.

There will be well over 120 hours of seminar material on every facet of the online "sport". This assures that you can select a full three days of sessions you are interested in and still miss most of it - no lightweight time here! With over 25,000 sq. ft. of vendor floor (last year's show had 8,000 sq. ft.) you will be able to see more hands on demonstrations of BBS and online software and hardware than have ever been assembled before. You will not have another opportunity to compare software and hardware side by side like this for another year.

But probably the most valuable part of the show is the evening "schmooz time" when you can talk to others about your ideas. Maybe you've been wondering if a particular program or hardware approach is worth your investment of time and money. If so, come look at it in person on the vendor floor. Attend sessions by those who made the product so you can understand how it works. Then, as you walk around the lake in the evening with the sysops you ran into who use that product, you can learn the parts you really need to know! With

over 1500 active sysops at ONE BBSCON '93, you can be certain that there will be several present who have used or are using the products you care about.

There is simply no way to describe the value of this personal networking that happens at ONE BBSCON. Hundreds of users of every type of BBS software and hardware will be there. There is nowhere else in the world where everywhere you turn you can talk to people who are interested in what you are doing. No matter what subject you are trying to find out about in the online world, you will find several people there who have already done what you are looking at doing. You can ask those who have tried each of the methods you are considering how it worked out for them. This research alone is simply not available at any price anywhere else! And you will have access to the people who design and build these products that is simply not available at any other time.

Did I mention luminaries? ONE BBSCON '93 will have hundreds of people each of whom would be the star attraction at any other event. The people who make the online world go in every area (BBS software, Internet, BBS networking, modem makers, commercial online providers, etc.) will be there. The creator of nearly every part of the technology we use every day will be there. You'll never get to see so many of the people who make it happen online in one place anywhere else.

If last year is any indication, ONE BBSCON will also offer you significant "buying opportunities". In two days last year over \$250,000 in merchandise was sold on the exhibit floor. Vendors offered show specials that made "going home without it" impossible for many items. This year the vendor floor will be much larger and it seems likely you will have many more opportunities to buy at those "show special" prices.

But for me the most exciting part of ONE BBSCON is the way people discover new ideas they never thought of before they came. Nearly everyone will leave with at least one "new vision" of some part of their interaction with the online world that they NEVER would

have had without attending ONE BBSCON. There is something magic that happens when this many active users of online technology get together and just talk about what they are doing. I call it "bull shooting as an act of discovery", and the outcome is simply amazing. The air literally crackles with the energy of the exchange and growth of ideas this interaction causes. Watching the people who came knowing everything anyone knew about each part of the online technology interact and create new knowledge on the spot is feeling I cannot describe. At ONE BBSCON '93 you will be present at the creation of ideas and technology which will move the online world forward.

So plan to come to see the latest releases of BBS software, to learn what add-ons are available for your BBS, or to learn how to make your BBS operate at a profit. You can certainly justify the cost of the trip on these grounds alone. If your company is evaluating online technology you cannot get more solid information for less money than a trip to ONE BBSCON. But what you will go home with is something that money simply cannot buy - you will know you are part of the most exciting and rapidly growing communications technology in the world. It is changing our lives and at ONE BBSCON you will feel it happening.

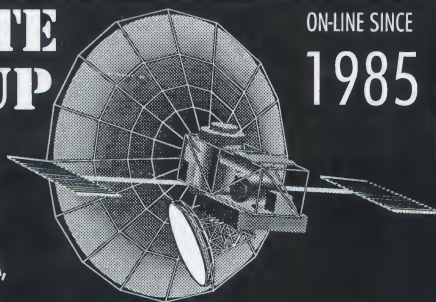
You can register and obtain hotel reservations by calling ONE, Inc. (303) 693-5253. They will also give you an 800 number to get the best air fares available. So make those phone calls and I'll see you in the crowd at **ONE BBSCON '93 August 25-29**. It's less than 90 days away, so don't delay. You'll kick yourself if you miss this one!

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TELEBIT 14.4kbps QBLAZER

In our April 1992 issue, we raved about an unusual modem from Telebit titled the QBlazer. This cube shaped pocket rocket weighed less than a copy of Boardwatch, when Boardwatch was a bit slimmer than it is now, and delivered 9600 bps data connections for the laptop crowd in pretty good style.

Since that time there have been a lot of product introductions of diminutive size and better speed. The 9600 bps delivered by the little black cube isn't so impressive any more, but we still like lugging the little thing around.

This month, Telebit announced the QBlazer Plus - an upgraded version of the same basic package. The new version ups the data rate to 14,400 bps V.32bis, and adds a 9600 bps V.29 fax function. With V.42/42bis error correction and data compression, the cube now sports a serial port speed of up to 57,600 bps. Telebit claims it is the only transportable modem offering both Macintosh and Windows communications software.

The new QBlazer Plus is available immediately at a price of **\$599** and features a two-year warranty. BBS operators can qualify for a discounted price of **\$299**. The company recently changed their support BBS telephone number to **(408) 745-3861**. The BBS has full information on the BBS operator discount program. Telebit Corporation, 1315 Chesapeake Terrace, Sunnyvale, CA 94089; **(408) 734-4333** voice; **(408) 734-3333** fax; **Internet: modems@telebit.com**

U.S. ROBOTICS ANNOUNCES 14.4K PCMCIA MODEMS

The Personal Computer Memory Card International Association (PCMCIA) bus standard has caught on in a pretty big way - particularly among laptop computers. Hewlett Packard has just announced the successor to the HP-95LX with the HP-100LX featuring PCMCIA slots. These slots allow the addition of memory, ethernet connectors, modems, or other peripherals built in a tiny credit card size package that plugs into the slot via a 68-pin connector. The market for PCMCIA fax/data modems is expected to grow to nearly 3.4 million units by 1995.

U.S. Robotics has announced a 14.4kbps V.32bis modem with fax capabilities built to this PCMCIA specification that can be plugged into this slot in the HP-100LX or other laptops, which increasing feature the slots.

The new modem is PCMCIA type II compatible - about 5mm thick. It is titled the WorldPort 14,400 Fax/Data PCMCIA 2.0 and it is priced at **\$649**. It includes both 14,400 CCITT v.32bis data and 14,400 bps CCITT V.17 fax capabilities in a tiny package. The new entry is the result of U.S. Robotics' acquisition of Suresnes, France-based P.N.B., s.a., which began shipping PCMCIA products last year.

One of the problems with PCMCIA modems is that they are so tiny, how do you put an RJ-11 jack for interface to the telephone system that is physically sturdy enough to withstand connections. The key element to the WorldPort model is what USR terms "Smart Data Access Arrangement" or "Smart DAA". This uses an adapter with a slim plug that connects to the card, and a fairly sturdy RJ-11 jack at the end of a short cable. The advantage here is that the company has a whole series of these adapters. The card-end plug is the same, but the RJ-11 end can be any type of connector used in any country. This makes the WorldPort ideal for international work. The "smart" part of it is, by selecting a different adapter, this also signals the modem to use the initialization appropriate for that country.

The new WordPort is available in June, with an HST dual standard model planned for shipment in July.

U.S. Robotics has made news recently with dramatic price cuts across their Sportster line. In May, USR announced similar price cuts for the WorldPort series of portable modems by as much as 30% on some models. The WorldPort 14,400 Fax/Data modem was dropped from **\$649** down to **\$469**. The same model for the Apple PowerBook was lowered from **\$699** to **\$499**. The data only WorldPort 14,400 was dropped from **\$599** to **\$439**.



Telebit's New 14.4kbps QBlazer Plus

On April 26, USR announced record sales and earnings for the second quarter ended April 2, 1993. Revenues for the quarter were \$38.5 million, an increase of 38% over the \$27.9 million for the same quarter of the previous year. Net earnings were also up 40% to \$3.7 million from \$2.7 million for the same quarter of fiscal 1992. Earnings per share for the quarter totaled \$0.31 on 11,994,000 weighted average shares outstanding.

Revenues for the six month period were \$71.5 million, up from \$52.9 million.

"We continue to benefit from our strategies for growth and expansion," said Casey Cowell, U.S. Robotics chairman, president, and CEO. "This record quarter is the product of several factors, among them continued revenue growth of high-speed modem products and the initial shipments of new LAN access products. Network management systems have continued their strong growth trend complementing our desktop modem products. In addition, international sales for the quarter reached a record \$14.2 million." U.S. Robotics (NASDAQ: USRX), 8100 North McCormick Blvd., Skokie, IL 60076; (800)DIAL-USR voice, (708)982-5092 BBS.

WINNIPEG RAID SHUTS DOWN EIGHT BULLETIN BOARDS

The war against online pornography has spread internationally, and seems to be spreading downward to smaller and smaller bulletin boards. Most of the attention in the past has been lavished on larger bulletin boards such as Rusty & Edie's 124 line BBS (copyright infringement), and Joey Jay's 32-line Offworld BBS (pornography).

But evidence is mounting that an even more sinister campaign may be going on across the country involving smaller bulletin boards who are offered the following deal: "We keep your equipment, you say NOTHING about this to anyone, and we won't press charges." Fearing the \$30,000 plus expense of even a successful defense, BBS operators are simply disappearing down the gaping



USR WorldPort 14,400 Fax/Data PCMCIA 2.0 - \$649

maw of a legal system run amuck in their efforts to "clean up" the online community.

On May 20, the Winnipeg Regional Police in Canada's Manitoba Province served search warrants on eight local bulletin boards accused of distributing pornography online. All equipment was seized and the systems shut down. According to Sgt. Dennis Loupin, the raids were the result of a lengthy investigation where the police subscribed to the bulletin boards, gained their trust, and downloaded files containing graphical depictions of sexual acts and bestiality.

Terry Jonasson was one of those shut down. Jonasson operated a small 4 line TBBS system in Winnipeg for the past two years. It ran on two 386 PCs with 1.5 GB of files and a couple of CD-ROMS.

Terry attends school in the mornings. After class on May 20, he lunched with a classmate, and dialed his BBS from his classmate's home to retrieve a file.

The BBS failed to answer.

Jonasson rushed home to see what the problem was - assuming some unusual technical difficulty. The search warrant was left on the kitchen table. He rushed to the basement to find the place in a shambles. Not only the BBS, but two other PCs, his voice answering machine, and inexplicably, an electric drill were seized. "They even took my copy of Lance Rose's SYSLAW book," noted Jonasson. "I hope they read it."

The "crime" in Jonasson's case seems to be distribution of files from an off-the-shelf CD ROM titled "So Much StareWare," a GIF-based title playing off the success of the "So Much ShareWare" CD by the same company. And according to Jonasson, the CD has some indecent images of nudity, but none of the bestiality or sex act depictions or other obscenity even under the somewhat more stringent Canadian obscenity standards. Nonetheless, Jonasson was advised by his attorney that it would cost about \$30,000 to de-

BBS MODEM DISCOUNT PROGRAMS

VENDOR	MODEL	LIST	SYSOP	BBS	VOICE	FAX
AT&T Paradyne	Dataport 14.4/Fax	\$555	\$222	813-532-5254	813-530-2000	813-530-2398
ATI Technologies	9600 ETC-E	\$499	\$275	416-756-4591	416-756-0718	416-756-0720
Cardinal Technologies	9600V42 V.32	\$349	\$219	717-293-3074	717-293-3000	717-293-3104
Cardinal Technologies	14400V32bis	\$449	\$249	717-293-3074	717-293-3000	717-293-3104
Computer Peripherals	Viva 9624e V.32	\$349	\$249	805-499-9646	805-499-5751	805-498-8306
Digicom Systems	ScoutPlus V.32bis	\$389	\$210	408-262-1412	408-262-1277	408-262-1390
Digicom Systems	Scout V.32	\$299	\$195	408-262-1412	408-262-1277	408-262-1390
Galaxy Networks	UFO V.32bis	\$999	\$299	No BBS	818-998-7851	818-998-1758
GVC Technologies	FM-9696/144V V.32bis	\$689	\$413	201-579-2380	201-579-3630	201-579-2702
GVC Technologies	SM-96V V.32	\$599	\$329	201-579-2380	201-579-3630	201-579-2702
Hayes Microcomputer	Ultra 144 V.32bis	\$999	\$249	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	Optima 144+Fax	\$519	\$179	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	ISDN System Adapter	\$1199	\$450	404-446-6336	404-840-9200	404-449-0087
Image Communications	Twincomm 9600 V.32	\$299	\$279	No BBS	201-935-8880	201-935-6548
Intel Corporation	14.4EX V.32bis	\$549	\$269	503-645-6275	503-629-7000	503-228-9707
Intel Corporation	9600EX V.32	\$599	\$299	503-645-6275	503-629-7000	503-228-9707
Multi-Tech Systems	MT932BA V.32	\$869	\$435	612-785-9875	612-785-3500	612-785-9874
Multi-Tech Systems	MT1432BA V.32bis	\$899	\$450	612-785-9875	612-785-3500	612-785-9874
Practical Peripherals	PM14400FXSA V.32bis	\$549	\$250	805-496-4445	805-497-4774	805-374-7202
Practical Peripherals	PM14400FXMTV.32bis	\$399	\$200	805-496-4445	805-497-4774	805-374-7202
Quadralink Technologies	1496V+	\$360	\$320	416-538-9999	416-538-0101	416-538-1355
QuickComm	Sprit II V.32bis	\$249	\$220	408-956-1358	408-956-8236	408-956-1345
Supra Corporation	SupraFAX V.32bis	\$399	\$249	503-967-2444	503-967-2400	503-967-2401
Supra Corporation	SupraFAX V.32	\$299	\$199	503-967-2444	503-967-2400	503-967-2401
Telebit Corporation	T3000 V.32bis	\$949	\$399	408-745-3861	408-734-4333	408-734-3333
Telebit Corporation	WorldBlaze	\$1049	\$429	408-745-3861	408-734-4333	408-734-3333
Telebit Corporation	QBlaze	\$549	\$299	408-745-3861	408-734-4333	408-734-3333
U.S. Robotics	Courier DS V.32bis/Fax	\$1295	\$449	708-982-5092	708-982-5010	708-982-0823
U.S. Robotics	Courier V.32bis/Fax	\$695	\$299	708-982-5092	708-982-5010	708-982-0823
U.S. Robotics	Courier HST V.32bis/Fax	\$995	\$349	708-982-5092	708-982-5010	708-982-0823
Ven-Tel	EC96 V.32	\$699	\$439	408-922-0988	408-436-7400	408-436-7451
ZyXEL	U-1496 +V.32bis	\$989	\$549	714-693-0762	714-693-0804	714-693-0705
ZyXEL	U-1496E+V.32bis	\$649	\$399	714-693-0762	714-693-0804	714-693-0705
ZyXEL	U-1496E V.32bis	\$469	\$299	714-693-0762	714-693-0804	714-693-0705

fend the case - and according to Jonasson, that is out of the question. Guilty or innocent, he's essentially guilty of not having the \$30,000.

And despite his assertion, the Winnipeg police apparently did do some homework beforehand, dialing the systems, subscribing to them, and downloading the files. Specific files were named in the warrant including BIRRA.ZIP, SUCK.ZIP, OBSESSED.ZIP, FOURWAY.ZIP, DOUBLETAKA.ZIP and FELLES.ZIP. The focus seemed to be on animated image sequences, and these were pretty graphic. The warrant didn't actually mention the electric drill specifically.

Terry Jonasson, Info-Source Canada BBS, 620 Herbert Ave., Winnipeg, Manitoba Canada R2L 1G2; (204)668-9725 voice; (204)667-0899 BBS (currently down).

With the proliferation of CD-ROM drives, many BBS operators are running as many as a dozen of these drives from a single BBS containing Gigabytes of files. Using off-the-shelf CD-ROM titles does not appear to be a "safe" strategy for online sex anyway. Reviewing each program on each 600 MB CD should provide hours of fun for BBS operators everywhere.

DEALING WITH ADULT .GIF IMAGES

By Greg Ryan, Co-Sysop, Exec-PC BBS
Exec-PC has taken a stance on copyright infringement of adult images. This article will declare our policies regarding said images and propose a standard way to evaluate newly uploaded pictures. In addition, Exec-PC was recently approached by a major adult magazine who applauded and agreed with our new policy.

This topic will be a roundtable discussion at the One BBSCON meeting in August of 1993.

The following is a bulletin that we have posted on Exec-PC:

Exec-PC is the largest bulletin board in the country and often other sysops look to us for guidance on current bbs related issues. One of the problems we sysops face right now is safeguarding ourselves against litigation arising from copyright infringement. We at Exec-PC have decided to take a proactive approach to the situation instead of just waiting for the lawyer's knock at the door.

After viewing thousands of files, Exec-PC has decided it is impossible to determine the origins and legality of many adult files. We have not personally had time to read any adult magazines for quite a few years. Suffice to say that to know exactly which pictures came from the various adult publications, we would need to memorize every single issue of all available adult magazines. A monumental job!

We have tried and tried, but have not found any consistent tests to determine if a file came from a copyrighted magazine. Can you look for a copyright or logo symbol in the pictures? Absolutely not. Can you look for filenames or descriptions to get a good ID on a file? Not consistently, but we give some good hints later in this article.

Even more shocking - we think there are still some people out there digitizing copyrighted pictures and distributing them! Don't people ever learn? If you are a sysop, do not assume that people creating the digitized pictures are following all the rules. It is not a prudent way to treat the situation.

Now that Exec-PC has given up on any easy tests for origins of pictures, here are the initial guidelines we offer you. Please send us updates to this info, we will post it on Exec. Someone has to do it or the marketplace will be a mess!

(By the way, will someone, be it the government, some attorney, somebody with greater knowledge on this topic, please give us sysops some professional guidelines? Our's were created after we met with someone who is more familiar with magazines in the marketplace. We had him give us examples of their artistic styles and type of pictures and we deduced the rest).

The following are blanket recommendations. You will certainly delete too much with these guidelines, but you will probably catch most of the questionable files.

WHAT TO DELETE:

(This applies only to images where you do NOT know who holds the copyright.)

a) Pictures that seem too professional. Do a check of reasonableness - does this look like a \$20,000 model posing in a \$200,000 set. Is it very clear, professionally airbrushed, perfectly lighted with no shadows and not a single imperfection? Don't know who created it? Delete it.

b) Pictures that are of relatively good-to-perfect quality that are R-rated, not X-rated. R-rated pictures seem to be the copyright problem area. An informal rule-of-thumb is that if you see any clear details in the lower body area, you probably don't have to delete it. Otherwise, if you don't know who created it, delete it.

c) Modern day celebrities in professional nude pictures. How likely is it that Fred's BBS On the Corner can afford to pay the Tooltime girl or Vanna White to pose in his basement studio? Not likely. Delete it. These pictures often fit into the aforementioned b) category of excellent quality R-rated pictures.

d) Are the persons in the photo more attractive and perfect than you could imagine any genetic good fortune or stroke of luck or work of God could create? You don't know who digitized it? Delete it. Since a perfect picture can end up blurry when digitized, it's frequently true that even a poor resolution picture of an extremely attractive person will be an infringement.

Again, if the pictures are excellent and the holder of the copyright allows dissemination of his or her files, it should be ok to post them.

We are not absolutely sure about the following files, but some of them

seem to fail the basic tests we invented above:

EXEC-PC ADVISES THAT YOU DELETE THE FOLLOWING FILES:

LADYR*.GIF files
BABE*.GIF files
DS-F*.GIF files
GES*.GIF files
NLR*.GIF files
L-BUF, L-UND, etc., files
LH*.GIF files
HT*.GIF files
MS*.GIF files
GL-PB*.GIF files
GL-R*.GIF files
Godfather files - GF-*.GIF, GFINS, GFGOD, etc.
VANNA files
LATOYA or JACKSON files
TOOLTIME files
PRISM Files
Garlique Pictures
MaxiPics
DataShack Pictures
Price is Right files
BAYWATCH files
ELENIAC files
BARBI files
Sports Illustrated pictures
Inside Sports pictures
Jessica Hahn pictures
Lato pictures
Vanity pictures
BREE pictures

Check out files with **PIC** imbedded in the filename. Files with **PLAYBOY, PB, PLAYMATE** or **PENTHOUSE** in their name or description. Check out files that say **BUNNY** anywhere. If you don't see a cute little rabbit in the picture you probably don't want that one.

Ironically, it's the R-Rated pictures that are the most dangerous. The racier the picture, generally the safer it is to post. This attitude may change as the Adult GIF industry shakes itself out.

Aside from the copyright issue there are some other pictures that should also be deleted.

Are potentially underage persons or animals involved? Why take a chance? Just delete them immediately.

That's it for now. We invite you to upload other hints to the adult file collection on Exec-PC, or tell us about it in a message. We will add the information to this bulletin as we receive it.

If anybody has advice on how to make this job easier we're all ears. For right now, though, we are going through our entire .GIF collection and deleting any potential infringers. Any new uploads are screened in a similar fashion.

A last word of caution. The fact that you have adult CD-ROM's on-line just means that you have that many more .GIF's to examine. In our experience, most adult CD's have, at least, some files that need to be excluded. Be careful!

We are trying to lead the industry by setting a good example of how to follow the laws as they develop, and how to show the proper respect for the work of others. **WE URGE ALL SYSOPS TO FOLLOW OUR EXAMPLE!**

Greg Ryan
VP, Operations & Co-Sysop of Exec-PC

SOFTWARE NOTES

PCBOARD VERSION 15.0 RELEASED

Clark Development Company has released version 15.0 of their popular PCBoard BBS software into "wide area" beta testing - allowing current registered users of the software to download and test the program prior to final production and shipping of the product. This may be the most "improved" version of PCBoard ever released.

The most prominent new feature of version 15.0 is the addition of an optional PCBoard Programming Language that essentially allows the sysop to "extend" the basic BBS design by attaching a PPL program to any prompt, input line, or command that a caller encounters. By using PPL and the new optional menuing system, the SysOp can create sub-menus for the main menu as well as for any file area or bulletin menu. This opens up the PCBoard in-

terface to be the creative expression of the BBS operator, and provides a powerful tool for designing more custom PCBoard systems.

Also with version 15.0, PCBoard has joined Galacticcomm, Mustang, Searchlight, and others on the RIPship. The new version supports the Remote Imaging Protocol (RIP) described in our June issue. Using RIPaint, operators can create graphical RIP menus employing real-time graphics, and a mouse interface to navigate the board.

The new version also addresses the previously weak chat function of PCBoard. Earlier versions were line oriented, requiring the caller to enter a complete line of text which was then "sent" to the other callers. The new Node Chat function allows callers to select a channel from 256 available, and each character is echoed to the group as it is typed. This new "real time" chat function allows both public and private chat channels and supports aliases.

Additionally, the new version includes more serious support for international languages and character sets, including 2-byte character sets such as those used in Japan and China.



FRED CLARK - CLARK DEVELOPMENT CO.

The message function of PCBoard has been dramatically improved. Addressing has been expanded to accommodate longer Internet type addresses by expanding the previous 25 character TO and FROM fields to 120 characters. Messages can be uploaded using any available file transfer protocol. Messages can have attached files that callers can send to each other via private message. Carbon-copy and return receipt functions have been added.

According to David W. Terry, Director of Programming at Clark Development, "Although almost a year in development, I think our customers will appreciate the wait after they see the new features which will be available to them in version 15.0. Basically, our goal has been to make PCBoard the most flexible and comprehensive BBS software package available from any source. With the new PPL, along with the many other enhancements to the software, it is possible to set up PCBoard on virtually any hardware platform and configure it to do virtually anything the SysOp wants - including the building of extensive menus and sub-menus, RIPscript operation, "intelligent scripts," operation with almost ANY intelligent serial

card, establishment of an extensive real-time node chat board, etc. My feeling is that if PCBoard v 15.0 can't do what a Sysop wants to do, most likely they will not find the capability to do it in any other software on the market today at any price!"

The new product will go into shipment in mid-June with a 2 node package priced at **\$170**, 10 nodes at **\$340**, 100 nodes at **\$680**, 250 nodes at **\$1000**, and 1000 node version at **\$2500**, plus shipping and handling. The new PPL compiler will be priced at **\$80**.

Clark Development has also recently established an Internet presence through a connection with Holonet (800-638-4656). Sales questions are answered from **SALES@CLARKDEV.COM** and technical support questions from **SUPPORT@CLARKDEV.COM**. Additionally, CDC has created a Usenet newsgroup for PCBoard sysops to use as a forum for discussion of their software that is echoed directly to the Salt Air support BBS in Murray, Utah. The new newsgroup is alt.bbs.pcboard. Clark Development Company, Inc., 3950 South 700 East, Suite 303, Murray, UT 84107; (801)261-1686 voice; (801)261-8987 fax; 800-356-1686 orders only; (801)261-8976 BBS.

FRACTERM — A VISION OF THE FUTURE FOR THE ON-LINE WORLD

By Jim Thompson
Western News Service

The days of the "text only" BBS are rapidly receding. High resolution color monitors, fast video display cards and high speed modems have cut a clear path to the future of the on-line world. It is a world of high resolution, full-color photographs and graphics and, in the not distant future, full motion video.

In this, the second installment in my journal on the quest for capturing, displaying and transferring high quality, color images electronically, I will look at one method of displaying those images in an on-line environment.

Fracterm by Imagen, Inc., in

Vancouver, BC provides a complete approach to image compression and display for the BBS operator. Using Fractal compression, an outgrowth of chaos mathematics, this is the first intelligent approach to the many problems associated with the compressing and decompressing of high quality images.

The actual compression method was developed by Iterated Systems, Inc. and licensed to Imagen, Inc. for use in their Fracterm package. Explaining fractal compression is not an easy task. Iterated Systems, Inc. describes the term fractal as, "a broken structure possessing similar looking forms of many different sizes. Fractals are infinitely magnifiable, resolution-independent patterns that can be described by small finite sets of instructions."

Basically, a fractal is a mathematical algorithm from which an image can be created. A fractal formula generates a fractal picture which is composed of an image based upon a basic pattern. It is this ability to create a larger picture from a small subset of data that allows for the creation of a complete image from a very small data set.

According to Iterated Systems, Inc., "The belief that images are made of fractals led Michael Barnsley to the

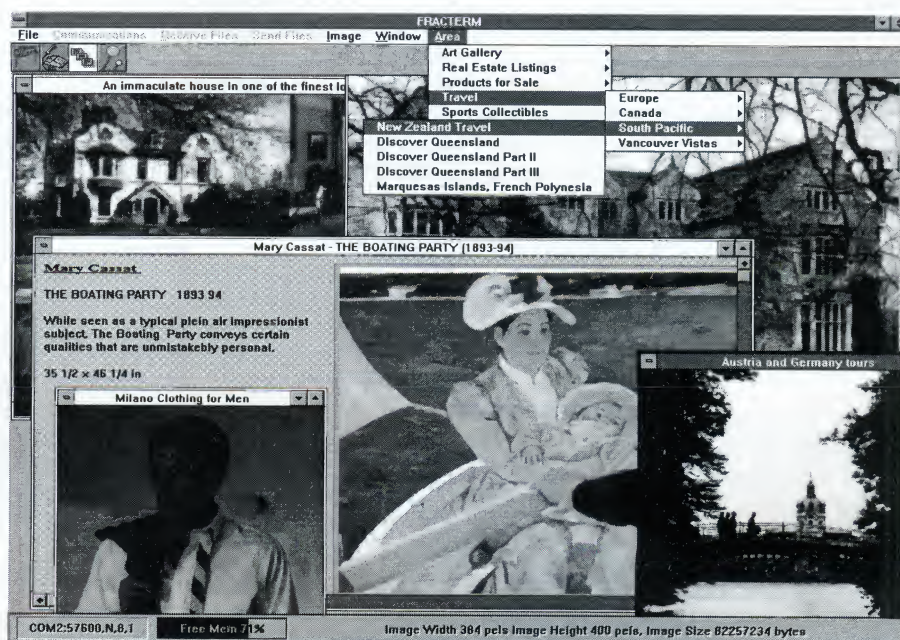
discovery of the 'Fractal Transform,' which automates the reduction of images to fractal formulas. This provides a highly compact file structure from which the original image can be reconstructed with remarkable accuracy."

Indeed, despite the extremely small size of the fractally compressed image, the quality is remarkable. Compression can be done with hardware or with Fracterm's software package.

Although not a standard, fractal compression is rapidly gaining acceptance. Presently, the most popular compression algorithm for photos is Jpeg (Joint Photographic Expert System). Jpeg provides excellent compression, but is not capable of the ultra-high compression of the fractal technology.

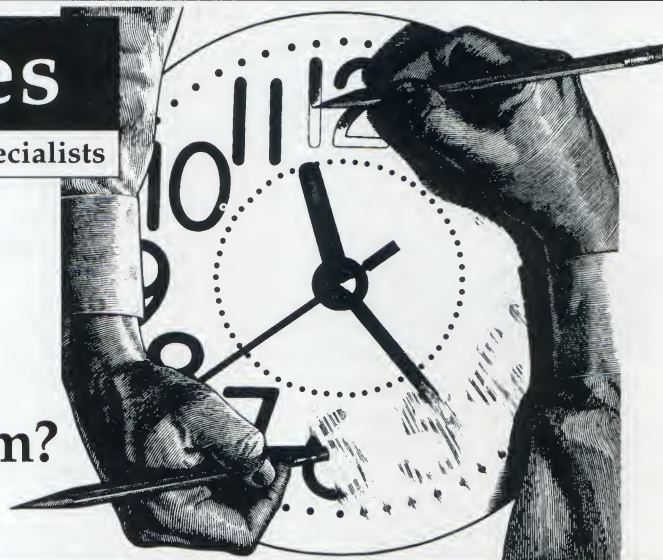
Also, fractal image compression is "resolution independent." If you want to display an image on a larger monitor (for example, a 19-inch display) the fractal image will expand to fill the entire screen without the need to increase the file size of the image. This is not the case with Jpeg compression.

"Resolution independence means that as hardware gets bigger and faster, the size of the fractal image will remain the same. With Jpeg, an image could grow as much as four times in order to fill a



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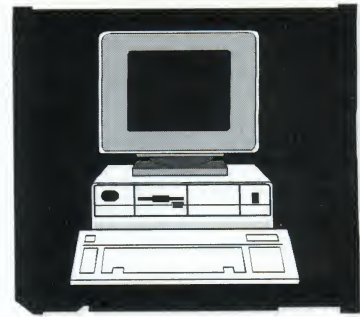
While our main business is the sales and support of TBBS/TDBS systems we find we have all the necessary software in place to market and support any software, regardless of the market it is targeted to. If you have an MS-DOS based software package you would like to market, please give us a call. We know we can help you increase your income, we've been doing it for our associated TBBS/TDBS programmers for years! If you have a "user supported" software package and feel it can do better commercially we would like the opportunity to help you be successful. For more information just call!

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TBBS / TDBS SYSTEM ENHANCEMENT SOFTWARE

QuickSearch

The ultimate in text file search programs, QuickSearch is the ideal tool for any customer or sales support system. QuickSearch is a program that is designed to create an index of over 11,000 text files in up to 99 directories and allow a user to perform a multiple boolean criteria search to find matches in these files and present them for display or download. It sounds simple, and it is! And it is unbelievably fast. This program is a must if you have a need for fast information retrieval. Easy to install and even easier to maintain, it can quickly put an end to repetitive questions from your users.

The Master Series

BoardMaster is the answer to the need for a fast, easy-to-use way to organize and display your message base without using TBBS menus. It allows ONE menu entry, or none at all. It displays up to 999 different message areas/topics with 60 boards displayed on each screen. BoardMaster is fully multi-lingual and color configurable by SysOp and individual users. It has full support for topic boards, Personal Message Groups defined by your users, and many other features to make it easier for your users to access message boards.

PostMaster will handle all your needs for sending mail to users. You create messages that appear very similar to TBBS messages and send to users by a wide range of criteria, including "send to list" capability, without impacting your TBBS message base. It even handles file enclosures. There is no limit to the number of messages that PostMaster will deliver and Individual logs are maintained for each message so you know when messages have been read. Other features include: automatic cutoff; automatic repeat; start delivery on specified date; complete support for ANSI and ASCII users.

Master File Manager (MFM)

MFM is designed to make it as easy as possible for your users to download files from fixed disks and compact discs with as little impact to the system as possible. And with the new network interface MFM adds even more capability and flexibility to this well known and full featured program. Hundreds of TBBS SysOps now use MFM to simply and easily handle all their file download requirements.

Entertainment Software

We have dozens of games and entertainment software available, including the all new The Wild Side (Interactive Adult Adventure), Video Poker, and Chain Links (an addictive word chain puzzle). If you are interested in arcade games, word games, games of chance or adventure games for your TBBS/TDBS system we have them at prices from \$29.95 to \$169.95.

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display," says Dwight Jones, CEO of Imagen, Inc. and developer of the Fracterm package.

Additionally, fractal compression allows for "resolution enhancement" — a process in which "fractal prediction" is used to create additional detail within an image.

The one drawback with fractal compression is that it works only with images of a limited size (640x480). If you are working with a large, high resolution image, you must first transform it to a lower resolution before compression. This is not a difficult process (both Aldus PhotoStyler and Adobe PhotoShop can handle this transformation easily) but is one additional step. Jpeg is not limited in this aspect and can compress images of any size or quality.

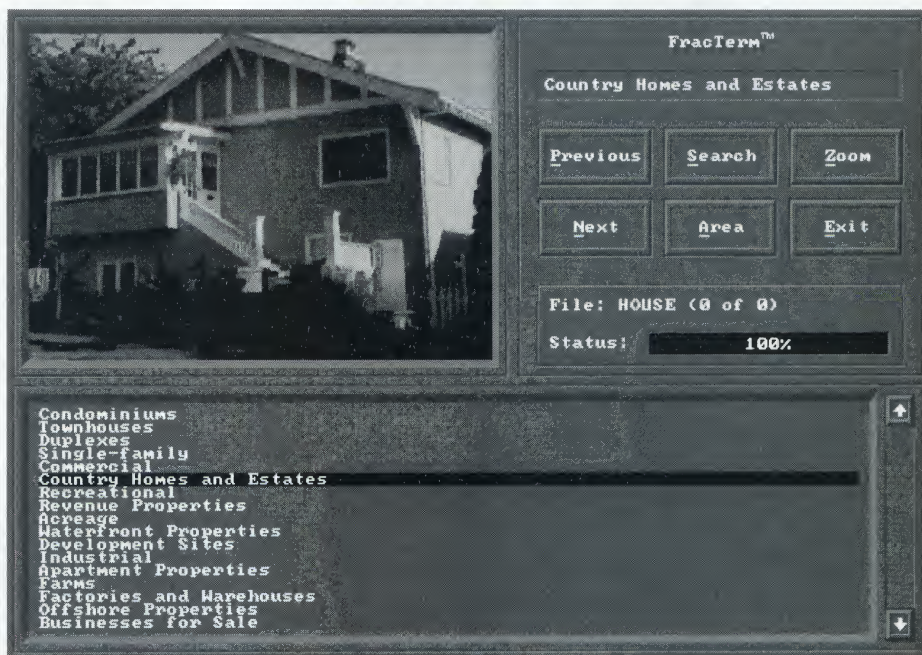
Although Imagen, Inc., advertises their product as providing "real time graphics for a BBS," this is not technically true. The program actually provides the ability to dramatically compress an image so it can be quickly downloaded into the callers terminal program. Depending on the size of the compressed image, this download process can take only a matter of seconds.

The result is that to the caller it appears that the images are being displayed in "real time." Actually, they are downloaded images that are decompressed and displayed on the local machine. Fracterm works with TBBS, PC Board, Wildcat! or any BBS capable of Zmodem transfers.

The Fracterm software package consists of four elements or modules. Let's take a look at each.

IMAGE COMPRESSION MODULE

From the Sysops point-of-view, this is the heart of the Fracterm system. This is the program that compresses the original images so they can be posted for "on-line viewing." Both a DOS and a Windows version of the software are available.



The DOS version has been offered for some time, the Windows version has been in development for several months and in beta testing since late March.

Both programs provide the same features and abilities and the same limitations. To use either programs you will need at least a 386/SX computer with at least four megabytes of RAM. The DOS version will compress 24-bit TGA files with a size of 640x480 or smaller. The Windows version compresses both TGA and BMP files with the same size limitation. Any other file type or size will be rejected by the compression program.

In both versions, you can select the speed of compression and the ultimate size of the file. Higher speeds and smaller file sizes come at the cost of quality.

The speed can be set at a factor from one (slowest) to four (fastest). The size of the compressed image can vary from 5k (lowest quality) to 80k (highest quality). Your actual choice of the speed/quality variables will determine not only the quality of the image and the compression time but, ultimately, the speed at which it will be transferred to the callers on your BBS.

The compression speed can vary significantly. The major deciding factors are the CPU of your computer, the amount of

available RAM and the settings selected in the compression program.

I tested both the DOS and Windows versions of the program on two machines — a 386/33 with 16 megabytes of RAM and a 486/SX with 8 megabytes of RAM, neither has a math co-processor. I did not find a significant difference between the compression times on these two machines. For our purposes here, all quoted times are based on the 486/SX with 8 megabytes of RAM since this is likely a more typical configuration.

Although a spokesman for the company told me that it can take 30 or 40 minutes to compress an image if I am using a machine without a math co-processor, I did not find this to be the case. In fact, the compression times were significantly below this. Here is what my tests revealed:

Original File Size: 715k

COMPRESSED FILE SIZE: 15k
(ratio 47:1) (transfer time @ 9600 baud:

Speed Setting	Time
4 (fastest)	2 min. 20 sec.
3	2 min. 47 sec.
2	8 min. 20 sec.
1 (slowest)	13 min. 42 sec.

COMPRESSED FILE SIZE: 20k
(ration 35:1) transfer time @ 9600 baud:

Speed Setting	Time
4 (fastest)	2 min. 56 sec.
3	4 min. 27 sec.
2	11 min. 10 sec.
1 (slowest)	20 min. 49 sec.

COMPRESSED FILE SIZE: 25k
(ration 28:1) transfer time @ 9600 baud:

Speed Setting	Time
4 (fastest)	2 min. 47 sec.
3	4 min. 16 sec.
2	11 min. 06 sec.
1 (slowest)	19 min. 29 sec.

The more an image is compressed, the less the quality. Lines in a highly compressed image lose their distinctiveness and become very jagged. In some cases, the image looks as though it was created with mosaic tiles. Flesh tones can appear as though they have been painted with oils.

The Windows compression program allows you to select the various options from a menu. You can specify exact settings for size and speed or select "quality over speed" or speed over quality" and let the program decide on the best settings for you. If you have the time, the ideal is to compress the images to about 8-10k in size using the highest quality. This allows for high quality with the fastest possible download time. The result is the true appearance of "real time graphics."

For the DOS program, you will have to specify your settings on the command line. The advantage here is that you can run the whole thing from a batch file. This is very handy when you have a number of images you want to compress — just set up the batch file which lists the images, specifies quality and speed, then start it running and walk away. Some Sysops use this approach to compress images overnight. When they arrive in the morning, the images are ready to be posted on the BBS.

For faster compression, Imagen, Inc. offers several hardware solutions. According to Iterated Systems, Inc., which manufactures the half-card sized board, the FTC-3 compression card re-

duces compression time from "at least three times" to "up to ten times." Dwight Jones tells me he compresses files with the board down to 8k in size in about a minute using the second to best quality setting (quality over speed). The cost of the FTC-3 compression board is \$990.

Iterated also makes a more sophisticated board selling for \$9,000. This card will handle still images up to 4000x4000 and can compress video.

I have not seen a demonstration of either of these boards, so I cannot verify this information. I will try to take a closer look in a future article.

FRACTERM BBS UPDATE MODULE (FRACBBS)

This portion of the Fracterm package consists of a utility program for updating and adding items to the menu which contain the images available for viewing. The program allows you to create the menu file (**CONFIG.BBS**) from which images are selected.

In actual operation, the **CONFIG.BBS** file is downloaded to the caller immediately after he/she enters the fractal image viewing area. The **CONFIG.BBS** file is actually a menu of the items available in this section. By having this file on the local machine, moving through the menu structure is both easy and fast. Also, it remains available after the caller disconnects from the host, so previously downloaded images can be viewed again.

The BBS Update Module also links to both a viewer and a text editor of your choice. The text editor allows you to enter any amount of text to accompany a given image. The viewer allows you to view the images while you are preparing your menus. This viewer can also be used independently of the update module to display fractal images from DOS.

When Fracterm was first offered, both this program and the compression module were copy protected via a hardware device connected to the parallel port of your computer (dongle). All copy protection has now been eliminated from all

portions of the program. This is certainly good news for all Sysops and makes the program much more attractive.

FRACTERM TERMINAL MODULE

Just as the compression program can be considered the heart of the system for the Sysop, the Fracterm Terminal module is the heart of the program for the caller. This program allows the caller to access and view the compressed images. Registered purchasers of the program are granted a license to freely distribute the program to their users. A DOS and a Windows version are available.

Both the DOS and the Windows versions are essentially the same in that they are composed of a standard communications program for dialing and connecting and a decompression program for viewing the images.

The DOS version was the original. It is a barebones terminal program featuring a dialing directory, basic COM settings, Zmodem upload and download ability, fractal decompression engine and viewer.

It is very easy to use, just select the BBS you want to call from the dialing directory via a highlight bar, press Return and the program dials. Once connected, you will need to fill in your name and password manually since there is no script or logon language available.

You can enter your password (and only your password) in the dialing directory and enter it by pressing Ctrl-F10. However, this is normally not easier than just enter the word yourself. Also, since the password is not hidden, it means that it can be seen by anyone looking at your dialing directory — not very secure if several people share one machine.

Another drawback to the DOS version is that it is necessary to load a device driver before it will work properly. The drivers will work only with specific VGA cards and chip sets. As of this writing only the following VGA adapters are supported:

ATI VGA Wonder series

Tseng 3000 (eg Orchid Prodesigner)
Tseng 4000 (eg Pixel Turbo)
Paradise
Trident 8900

If you don't have one of these cards or a card with the appropriate chip set then forget about using the terminal program. It does work with other cards, but expect strange things to happen when you try to view the images. Image, Inc. is working on this and expect to have more drivers available in the near future.

If you have the correct VGA setup, the program works perfectly. After connecting to the host and entering the fractal viewing area, you are presented with a tastefully designed viewing area consisting of an image frame in the upper left half of the screen, control buttons to the right and an area for menus or text in the lower half.

An indicator bar registers the status of the download of the images. If your compressed images are from 10k-20k, and you are using a high speed modem, the download takes only a matter of seconds. Not only is the image received, but any accompanying text is also available. Once received, you can zoom the image to full screen and switch between images. The images, text and menus remain available for viewing even after you disconnect from the host system.

As noted, if you have the proper video setup, the program works perfectly, but it is still not without its problems. Creating a terminal program can be an endless task. It seems that there is always something new to add. As a freeware program, no one expects it to compete with commercial program, but there are some minimum requirements that should be addressed.

At the very least, any terminal program should have the ability to open or close a capture file — how else can you capture your mail when calling a system? It should also have a rudimentary script language — even if this consists only of such statements as, "wait," "reply" and "disconnect." Fracterm does not have these features, but according to Image's Dwight Jones, these con-

cerns are being addressed and will be available in future releases of the program.

The Windows terminal program is a real pleasure to use. Although it is still in the early stages of development, it is already blossoming into a first rate program. It will never take the place of Procomm, Crosstalk Mark 4, or any of the many full-featured commercial terminal programs, but when it comes to capturing and viewing fractal images, it's great.

This program is down-right fun to use. Once you connect to the host and enter the fractal image area of the BBS, a whole new world of graphics and color open. The downloading of the menu file (**CONFIG.BBS**) adds a new option to the menu bar along the top called "Area." Selecting this reveals the menu and sub-menus indicating the images that are available.

The downloading of those images is smooth and fast. Once acquired, the images and accompanying text are placed in individual windows which can be moved around the screen, re-sized or reduced to icons. I must admit, having several full color images on the screen at once and having the ability and freedom to arrange them is a real kick.

It certainly gives you a feeling for the ultimate future of the on-line world. If you have not tried this, you should.

In addition to decompressing fractal images, the current version of the Windows terminal program allows downloads using Zmodem, Xmodem, Ymodem and Kermit. Upload facilities using the same protocols and an off-line viewer should be available by the time this article is published.

However, like the DOS version, Fracterm's Windows version is not without its shortcomings. There is no capture file ability, no script language and only basic functions. But the program does deliver on its ability to download and display full color images — not a bad trick in itself. Also, since it is running under Windows, there are no problems with VGA hardware. If you can run Windows, you can run this program.

Unfortunately, there is no terminal program available for the Macintosh. I see this as a major stumbling block to having this technology become a standard for on-line image transmission. Presently, the majority of the newspapers and magazines, many of the largest corporations and most educational organizations have standardized on the Macintosh for image manipulation. Unless, this segment of the computer world is allowed to use this technology, fractal imaging and compression will never become widely accepted. As I see it, the race is on for the establishment of a standard. It is a marathon, to be sure, but to the winner will go all the glory and gold.

As I say, this is a technology that is full of promise. Although the Windows version has only just been released and is still in its development stages, already Imagen, Inc. is working on a new, enhanced version called Fracterm Pro for Windows. This program promises TCP/IP connectivity for Internet access, links to databases and mail systems, built-in fractal image compression, Jpeg de-compression and viewers for TIFF, PCX, TGA and other popular image types.

It will likely be some time before the new Pro version is available. Meanwhile, they are working hard on getting the little bugs out of the present version. According to Dwight Jones, "Imagen, Inc. is committed to addressing any problems as quickly as possible and often that means the frequent release of new versions."

Indeed, it seems they release a new version every few weeks. While this is admirable, it often results in frustration since each new version has to be tested and then distributed or made available by a Sysop to his/her users.

On the plus side, it points up the enthusiasm and commitment they have to this technology. Imagen, Inc. (formally Cardz) had a bit of a rocky start, but have since reorganized and now appear to be on the verge of starting a minor revolution in the on-line community.

We plan to integrate Fractal compression technology into the Marlboro Racing News Computer System and will be

using it during our inaugural electronic photo transmissions from the Indianapolis 500.

Of course, there are other systems that offer the promise of on-line photo display and I will take a look at them in upcoming columns.

The Fracterm Package includes both the DOS and Windows versions of the compression program, the off-line viewer, menu maintenance program, and the DOS and Windows Terminal programs which can be distributed at no cost to your users. The cost is **\$700** for an 8-line license, **\$1,300** for a 16-line license, **\$2,000** for a 32-line license and **\$3,000** for a 64-line system.

Right now, Imagen, Inc. is offering an introductory special 2-line license for \$99. Under this program, Imagen, Inc. will upload the program to you and give you full use of it for three months. If you decide it is for you, the full price applies. No refunds or credits are offered under this plan.

(Jim Thompson is Managing Editor of Western News Service in Los Angeles, California. He also created and manages the Marlboro Racing News BBS.)

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ESoft ANNOUNCES INTERCHANGE PROGRAM FOR TBBS



eSoft, Inc. has begun beta test of a new option module program for their TBBS multiline BBS software program titled Interchange. Interchange turns the normal BBS transaction of dialing IN to the BBS around by allowing the system to seize an available telephone line and dial OUT to other systems much after the fashion of a terminal program - either from the console or in an automated fashion using a script language.

The utility of this is deceptive. Quite obviously, the BBS operator can dial out while leaving his system up serving callers on other lines. And of course, the system could be automated to dial out and retrieve a specific text file or whatever from another system on a schedule. But scripts can also be tied to menu items. Item 7 on a menu, for example, could cause the system to dial another local BBS or online service - a local library card catalog such as the Colorado Alliance of Research Libraries here in Denver for example. In this way, other systems could actually be menued from a single BBS. You could put an entire local list of bulletin boards up on menus for access by your callers.

One of the primary applications is to use TBBS as a dial-in front end for larger mainframe databases. The act of connecting to the main frame and calling up a particular database can be

scripted and put on a TBBS menu - where the mainframe database function looks like just another TBBS menu entry.

But it may go beyond even that. One of the advantages of TBBS is that it has its own multitasker built into it - you can run up to 64 lines on a single PC. But one of the disadvantages of this is that it is essentially a "closed" system - you can't run other DOS programs for callers in the fashion many other BBS packages do - usually termed DOORS. There is no way to "shell out" to run another DOS program.

eSoft has fought this disadvantage fairly admirably with their database option module (The Data Base System - TDBS) by allowing the community to write applications in the dBASE development language and compile them as part of the BBS. In this way, you can do custom programs, and in fact a thriving third party market comprised of people developing and selling an assortment of game and utility programs written in dBASE has emerged. It has opened up the platform. But for some applications, there is a genuine need to run some existing DOS program or utility.

Interchange can put another computer on the menu. By connecting to another PC through a null modem cable and putting the option on a menu, callers can in fact "shell out" to another computer to run DOORS, or any other application for that matter. The script language can create any DOORS.SYS file necessary to run any existing door program from the application server machine. In theory, Interchange allows TBBS to add a series of "application servers" connected by serial cable to make available to callers. This opens the platform a fairly enormous step further.

The script language is powerful enough to be analogous to script languages on any terminal program, including X,Y,ZMODEM file transfer protocols. One innovative element is query screens that can be put up on the system allowing callers to enter data that is then passed to the script as insertion parameters for the actual dialing process.

The result has been very nearly a contest within eSoft to develop the most ridiculous applications for Interchange. Currently, about half the programming staff have the BBS dial them voice or on their pagers to get up in the morning. One of them actually has a BSR appliance controller hooked up to the modem. The BBS dials the controller to start the coffee pot, and fifteen minutes later dials the voice phone to wake him up. They've done some experiments with dialing a terminal and "delivering" files via ZMODEM.

The program is currently in beta test and officially scheduled for release this July 1 at a price of **\$149.95**.

Unofficially, eSoft has been busy with development of another project heretofore referred to only as "secret stuff." But the rumor mill has produced some details. With TBBS running multiple lines from a single system, it by rights should be a pretty persuasive chat system - allowing callers to type conversations to each other in real time. And there have been a few systems operate as chat services by dint of an act of will on the part of the BBS operator. But the TBBS chat functions, while adequately impressive performance wise, have largely been viewed as very "basic" and not terribly friendly.

And according to TBBS developer Phil Becker, there is a good reason for that. By his own admission, he doesn't really grasp the nuances of chat. And the growing market for social chat systems has been dominated by Galacticomm's Major BBS, DLX, and Oracomm. So eSoft has apparently decided to concede defeat on the interface and just adopt them all. An option module unofficially termed UltraChat will not only allow a TBBS to look like a Major BBS, a DLX, or an Oracomm, but actually each CALLER can pick which interface they want to use to interact with other callers, many of whom may be using a DIFFERENT interface.

More interestingly, it would appear that some parts of Interchange made it into UltraChat. Becker thinks he can engineer an UltraChat link allowing TBBS operators to easily and automatically link up to 1000 TBBS systems all over

the country for chat with up to 64,000 callers having simultaneous access to all chat areas of all the boards. This is not a common "channel" - but the full chat functionality of the entire system - linked 1000 times. Two callers, each on entirely different BBSs separated by a continent, could meet each other in group chat and set up a private chat on the side. Insiders at eSoft think the growing demand for chat services is such that this could bring them a couple of hundred additional installations almost immediately.

UltraChat is tentatively scheduled for an August 1 release at a price of **\$195**. eSoft, Inc., 15200 E. Girard Ave., Suite 3000, Aurora, CO 80014; (303)699-6565 voice; (303)699-6872 fax; (303)699-8222 support BBS.

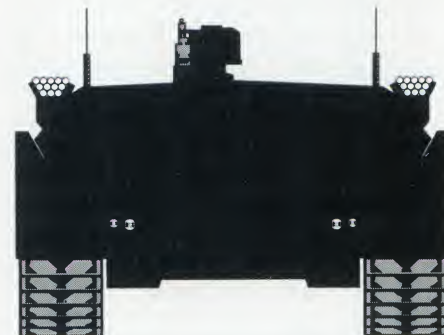
SPECTRE - MULTI-PLAYER GAME FOR MODEMS AND LANs

by Alan Bryant

The concept of playing games by modem is hardly new. One of my earliest contacts with the idea was a flight simulator game, barely more technically advanced than "Pong," which ran on Tandy's Color Computer 2. The "planes" were hardly more significant than crosshairs flying around on a red and blue screen, the action was jerky, and you nearly always got nailed before you even saw your opponent. Thankfully, technology has advanced just a bit since then, and many current game software titles offer "modem link-ups" so you can shoot your best friend out of the sky, blow-up his bases, or sink his ships; but most of these games are designed more for single player use, with two players by modem being an afterthought. Velocity's Spectre, on the other hand, is an addicting game that can only be appreciated when you hook-up with other players in a competitive environment.

At its core, Spectre is a "tank" game. You maneuver the tank around a finite square playing field, moving around obstacles. Your goal is to pick-up all the flags which are peppered around the

playing field before time runs out. When you've collected all the flags, you move to the next level, complete with more obstacles and less time to accomplish your goal. When played single-user, higher levels also have enemy tanks shooting at you. Simply running away from them doesn't work especially well;



when you reach the outer limits of the playing field, you'll find yourself bumping against an invisible wall.

In a single-player environment, Spectre quickly grows old. Its overall concept is much like that of the early Atari arcade hit "Battlezone," and Spectre's graphics are almost as primitive. Although obstacles and backgrounds are interesting high-res images, the tanks and other elements are simplistic and low-resolution, presumably to maintain fast performance when the game is played multi-user.

And multi-user play is where Spectre is downright addictive. The game offers four different types of multi-user play: modem and null modem direct connects for two players, plus Novell IPX and NetBIOS support for a virtually unlimited number of simultaneous players in a LAN environment. There's nothing quite like you and your co-workers forgoing work for awhile blasting each other to bits from your LAN workstations.

We tested Spectre under Novell 3.11 using IPX mode, and three of us raised our blood pressure considerably before the boss put an end to our antics. We also tested two players under LANtastic in NetBIOS mode with success, as well as modem and direct connections. All modes operated perfectly and were mostly problem-free to setup, although the modem connections were a little

rough to get going initially due to what turned out to be a configuration error.

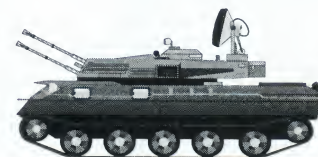
In multi-player mode the game's goals and dynamics are slightly different. The goal is still to grab all the flags, but the flags don't go away as they do in single player mode; rather, you simply try and "run over" them all while your opponents attempt to do the same. The screen shows where the various players stand in their flag collection goal (a color bar showing the flag colors collected). Whoever collects all the flags first wins that level and receives a bonus; all players then proceed to the next level. Of course, you can blow away your opponents if you want to distract yourself from the real goal of flag collecting. Each player's name is displayed above their tank so you'll know who it is you're blasting your cannons at, and it also allows colleagues to gang-up on others in the game. The Spectre manual's advice on having a conference call going via speaker phone is well taken; it allows

you to hear your enemy's expletives when you nail them for the tenth time in a row.


Although the game's concept is simple, it will absorb countless hours of your "free" time when someone's available to hook-up with you and take the game for spin. Irritating but reasonable, the game will not allow a copy to "play itself," meaning that you can't simply buy one copy, give a copy to a friend, and have success playing against each other. The game will recognize that it's playing a copy of itself and refuses to continue, forcing you to buy one copy for each person who'll be playing. The game is reasonably priced, however, so this shouldn't be an undue hardship for serious gamers.

Spectre supports Sound Blaster and Ad Lib for enhanced sound effects; keyboard, mouse or joystick for tank control; and has configurable graphics levels for slower machines which may bog

down with all options enabled. Spectre is available in a PC version (which we tested) as well as a version for the Macintosh. You won't miss Spectre on the software shelves: it comes in the most unusual product package you can imagine, a weird-shaped green box with a 3-D black polygon in the middle. Spectre, **\$49.95**, Velocity Development, P. O. Box 875, Palatine, IL 60078-0875. (708) 991-0594 (Voice) 76670.2202@compuserve.com (E-Mail).



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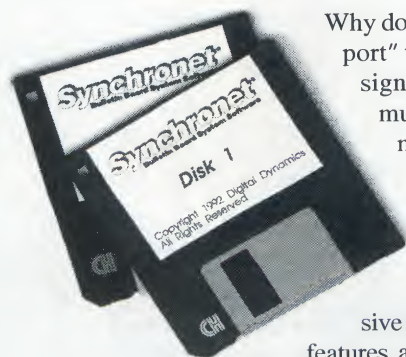


Feature and Price Comparison for an 8 node BBS on a single 486 PC

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Node license	\$199	\$799	\$440	\$508	\$895
Multitasker	\$200	\$200	\$200	Yes	Yes
8 port I/O	\$300	\$800	\$995	\$575	\$500
Multinode chat	Yes	Yes	Yes	Yes	Yes
Multichannel chat	Yes	Extra	No	Yes	Yes
Private key by key chat	Yes	No	No	Yes	Yes
Offline reader support	Yes	Yes	Extra	\$199	\$99
QWK networking	Yes	Yes	Extra	No	Yes
FidoNet import/export	Yes	Yes	Yes	Yes	Yes
Send/receive NetMail	Yes	Yes	No	No	Yes
PostLink (RIME) support	Yes	Extra	Yes	Extra	No
RIPscrip GUI support	Yes	No	No	Extra	No
Novell/DOS LAN support	Yes	Yes	Yes	Yes	No
976/900 billing support	Yes	No	No	Extra	Extra
Real-time node activity alerts	Yes	No	No	Yes	Yes
Enhanced CD-ROM support	Yes	Yes	Yes	Extra	Extra
Multiuser SDK	Yes	No	Extra	Extra	Extra
Incoming FAX support	Yes	No	No	No	No
Chat between doors	Yes	No	No	Yes	No
Bidirectional file transfers	Yes	Yes	Yes	No	No
Multiple user command sets	Yes	No	No	No	No
Supports DOS doors	6 types	1 type	3 types	No	No
Hierarchical msg & file areas	Yes	No	No	No	No
External transfer protocols	Yes	Yes	Yes	No	No
Total price	\$699	\$1799	\$1635	\$1282	\$1494

Prices do not include CPU or modems. Features and prices compiled from vendor supplied information 2/93, are subject to change without notification. Wildcat!IM, PCBoard/M, MajorBBS, TBBS, QWK, FidoNet, PostLink, RIME, RIPscrip, Novell, and DOS are trademarks or their respective companies. Commercial or Shareware Toss/Scan utilities are required for some message network technologies.

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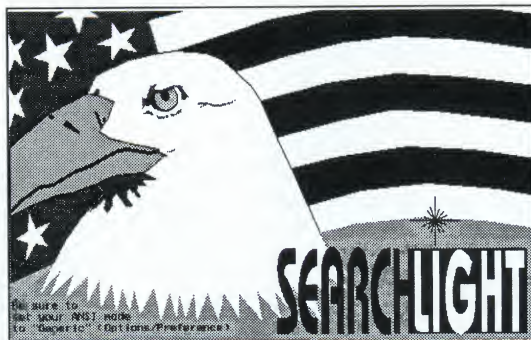
RIP Graphics

In 1993, Searchlight is pioneering online graphics technology. Our programmers helped design the new non-proprietary RIP graphics protocol that is quickly becoming a BBS industry standard, and Searchlight 3.0 is the first BBS product with internal RIP support. With RIP, you can design startling high resolution graphics interfaces like the ones shown here, complete with pictures, icons, fonts, mouse buttons, and more. You can even add graphics to messages! RIP offers an exciting new way to look at BBSing, and Searchlight 3.0 has it right now.

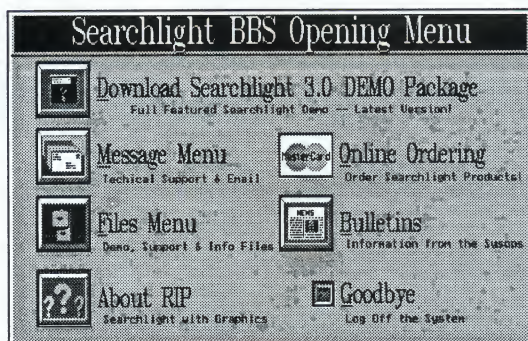
Powerful Features

At Searchlight, we think messages, conferences, files and nodes should be limited only by system resources, not arbitrary numbers. You shouldn't need an external "doorway" program just to run remote DOS shells. In fact, all of your maintenance programs and utilities should operate from a remote location as easily as they do locally — and they should be complete so you don't have to spend hundreds more for add-ons.

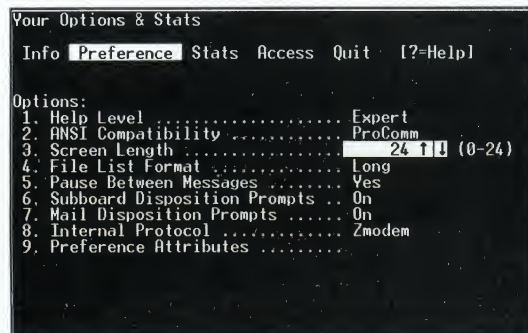
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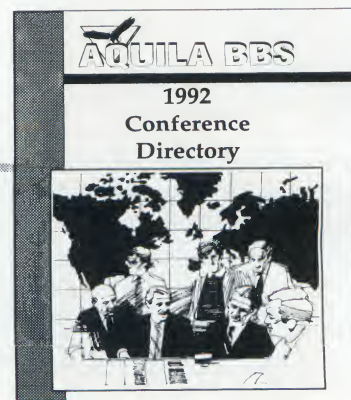
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The AQUILA BBS Team (Left to right: Kevin & Kristy Behrens, Steve Williams, Chris Babb)

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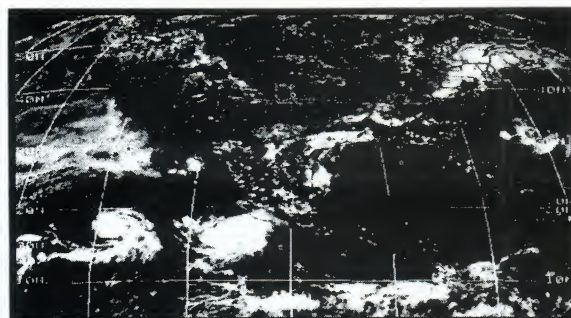
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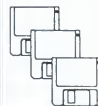
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GOVERNMENT DATABASES ARE PUBLIC PROPERTY

by Lance Rose

What do mining sites, pharmaceutical research projects, timberlands, and computer databases have in common? Answer: they are among the many kinds of property paid for by the tax dollars of U.S. citizens. Which makes us the owners of all this stuff, right?

Er, sure . . . though frankly, a few small problems have cropped up with our national properties. It seems the U.S. government never really figured out how to manage the massive assets it steadily accumulated over the past couple of centuries. Control over different public properties splintered quite readily among dozens of different agencies, each with its own agendas and ideas about asset management. Soon after each new kind of public property was created, clever entrepreneurs inevitably found ways to sell our own property back to us, often in commercial markets and always at a handsome profit.

As outrageous as it may seem, this is business as usual for many companies that deal regularly with the government. Until recently, precious little has been done to investigate the problem, much less try to fix it. Now, however, the public has a new champion, dedicated to cutting off the flow of pork to private interests and giving us back the benefits of our own public property: the Taxpayer Assets Project or "TAP", based in Washington, D.C.

TAP was started in the late 1980's by Ralph Nader, the famous consumer advocate. Its first project was discovering and cataloguing all the different properties owned by the U.S. government. Somehow no one ever did this before throughout the long history of this country. The U.S. owns an immense amount of property of all kinds, but the extent of the full portfolio was always a mystery. From the signing of the Constitution forward, we have been kept in the dark as to what kinds of property our government owns, how much of it, and how well

or poorly it manages that property.

TAP found that the government indeed holds a vast array of assets, including mining resources, research and development products, information databases, buildings and lands, and radio spectrum. As its picture of the government's property portfolio came into focus, TAP started moving past the pure research stage. This effort took off when economist Jamie Love assumed the post of TAP's research director. His first move was to narrow TAP's focus toward certain classes of government assets. He also began "value-added" research efforts, resulting in white paper reports to help inform the public debate on taxpayer asset issues.

TAP's first couple of white papers analyzed the government's grants of mining rights on public lands to private companies. It then moved on to reviewing the government's timber management efforts. TAP recently shifted its focus again, and is currently devoting much of its efforts to two other areas: the products of government-funded R&D projects, and government information products.

In the area of government information, TAP is pursuing its goals across two broad fronts: seeking and responding to lawmaking concerning government information assets, and the "Crown Jewels" project, in which TAP identifies and seeks greater public access to the most valuable collections of data managed by our government.

What exactly are TAP's ultimate goals? According to Jamie Love, there are two main purposes. First, TAP seeks to raise the public's consciousness about the full range of its own public property, and how it is handled (or mishandled) today. The public owns a lot of things that are worth a lot of money. Unfortunately, our government often does a poor job of realizing the full value of those assets. Too often, government agencies dominated by industry loyalists give mining rights, drug patents and other valuable property to private companies cheap or for free. These companies take those same assets and sell them back to the very consumers who funded them in the first place with their

tax dollars. Before these vicious, institutionalized cycles can be effectively countered, the public needs to learn the facts about them, and develop some suitable concern about how all that money we pay in taxes is frittered away through government mismanagement and favoritism.

Second, TAP seeks to develop models for how government should handle our public resources, and for assuring public accountability by the managers and controllers of publicly-owned property. Public property in this country is routinely treated by many large companies as if it is "other peoples money" for use in their private profitmaking schemes. Except in this case, all of us, all taxpayers, are the "other people!"

In the government database arena, TAP does not want to keep private companies from distributing government information to the public. To the contrary, it believes private companies play an essential role in distributing government-held data to the public. TAP just wants to cut a better deal for the public than the deals being made today. An important part of TAP's program of change is to halt the government's current practice of granting exclusive rights to private companies to distribute designated government databases. Such exclusivity, and the resulting denial of public access that results from overpricing and other common discriminatory practices, just cuts too deeply against our ability to hold the government accountable for its activities. It also prevents most of us from ever directly benefiting from the exclusively controlled public data.

TAP is still a small organization, and needs to operate in "David and Goliath" mode much of the time. It is set up as a "project" within Nader's Center for the Study of Responsive Law, and has 501(c)(3) tax-exempt status. Currently TAP has three employees, plus a number of interns and consultants, both paid and volunteer. According to Love, Ralph Nader himself is strongly involved in TAP, and considers it one of the most important of his consumer-oriented initiatives. TAP's funding comes partially from the Center's general budget, partially from contribu-

tions from private foundations and individuals, and partially from sales of its own publications. It is very careful to avoid accepting money from sources that might influence it to compromise its goal of loosening the control of private interests over public property. Fortunately, TAP is able to leverage its influence by working with other organizations with similar or overlapping concerns. These include such groups as the American Library Association, Computer Professionals for Social Responsibility, Public Citizen, and the Center for Media Education.

The question commonly comes up whether the Freedom of Information Act can play an important role in TAP's project of opening government databases to the public. According to Love, there are major obstacles preventing FOIA from being of much use in this area. One is that the government does not need to satisfy FOIA requests where the data is considered proprietary to a private company. Since much of the data that TAP seeks to open to the public is currently under exclusive contract to private companies, the government can often successfully seek shelter from disclosure under that exemption. Another, more subtle obstacle is a different exemption from FOIA obligations, for data that is being "published" in some form. Under this exemption, government information that is privately published for an enormous price would be exempt from FOIA disclosure, even though for all practical purposes it is so highly priced that practically no one can afford it in published form. Finally, FOIA is designed mainly for providing access to specific publications and records, rather than ongoing general access to large databases.

TAP is currently concerned with a couple of major pieces of proposed federal legislation relating to government databases. One is HR 629, the Improvement of Information Access Act ("IIA Act"), originally introduced in late 1991 and reintroduced in January, 1993. In its own words, the IIA Act "is based on the simple, irrefutable premise that Government information belongs to the people." To this end, the IIA Act would establish certain general procedures to be followed by all government agencies.

Each year, every government agency would have to issue a comprehensive report on its information dissemination policies and practices, and accept and consider public comments on how it might improve its practices. It would also have to announce and justify every discontinuance of a previously established data service, and consider public comments before finalizing the discontinuance. All information would have to be disseminated "in useful modes and through appropriate outlets", which seems to mean it should be distributed in a form people can use. Finally, no agency could charge more for the information than the actual cost of distributing it to consumers, which should be very low in almost all cases if honestly accounted, and could not charge any fee to recipients if they choose to redistribute the information further to others. It would be a nice start if this bill was to become the law.

Another bill being closely watched is known as "GPO Access" as we go to press. It is a scaled-down version of the WINDO and Gateway bills introduced last year. Unlike the mostly procedural IIA Act, GPO Access would direct that certain databases be made available online by the Government Printing Office. These include the Federal Register (in full text), the Congressional Record, an electronic directory of Federal public information, and information from federal agencies specifically requested to be placed into the online access system by such agencies. Like the IIA Act, GPO Access would limit the government's fees to users to the incremental cost of access. Access would be free for the federal depository library system, which has 1,400 members across the country.

This sounds pretty good, but TAP has some telling criticisms of this approach, including: GPO Access does not provide for any start-up funding of the online system; it does not mandate Internet access to the data, meaning the government could actually set it all up on a two-line BBS if it wanted; while the earlier WINDO/Gateway bills would have given the GPO broad authority to designate federal information that would be placed on the system, the GPO Access proposal only mandates a small



number of core publications for online access, and leaves additional information entirely to the discretion of individual agencies, which in many cases could be motivated to keep their information out of the system in order to make a little money in exclusive deals with large private companies; and various other problems. TAP addresses such issues not only from an idealistic viewpoint, but with an understanding of the practical mechanisms that must be set up by legislation to assure that the promised information access will actually be delivered.

In addition to such broadly drafted legislation, TAP is also working to secure meaningful public access to the so-called "Crown Jewels" of the government information system: the SEC's EDGAR system that maintains all public filings made under the federal securities acts; the Justice Department's JURIS system, containing among other things all federal case reports online; the LEGIS systems used by Congress, with full text of all pending bills and other congressional information; ISIS, a superset of LEGIS containing additional research and Library of Congress materials; the Automated Patent System; SCORPIO, a system used by Library of Congress; abstracts contained in the NTIS system; and the Foreign Broadcast Information Service maintained by the CIA, with abstracts of foreign news from all over the world - currently available only in paper.

Opening public access to each of these systems raises major issues. One glaring example is the EDGAR system, currently the subject of much controversy. Mead Data Central has an exclusive contract to compile and maintain EDGAR information, provide EDGAR-based information services to the government, and to provide EDGAR services to other companies and individuals as part of its own LEXIS legal database system. The problem arises from Mead's extreme stinginess in providing basic EDGAR information to others on a wholesale basis outside of Mead's high-priced LEXIS services. Mead will only provide same-day tapes of all SEC filings on a given day, unsorted in any meaningful manner, and including errors and even filings that might be rejected the next day by the SEC. Only a huge company with an ongoing large-scale data processing operation, like Mead, can extract the information on these tapes in a meaningful form and keep a historical database of old filings. The result is that only Mead, and perhaps a couple of other large data companies, actually gain access to the government information on a meaningful wholesale basis. Everyone else who uses EDGAR data contributes to MEAD's hefty profit on its private data services. Oh yeah - the government actually pays Mead to do all this . . .

This regime is light years distant from the goal of letting the public have access to its own data at a reasonable cost, or what those proposed bills call the "incremental cost of dissemination." Fortunately, some genuine controversy has been stirred up over this major pork barrel deal which benefits Mead Data Central and burdens everyone else. One neat move recently made by TAP was a letter to Representative Markey, who is now very influential on telecom matters in the House, protesting the EDGAR setup describe above, and signed by some major computer network companies including America Online, Performance Systems International (PSI), and Community Information Exchange (CIX). Although there's a lot of long-built momentum behind Mead's current monopoly over the supposedly public EDGAR system, TAP's clear-eyed pursuit of the issues in the public interest creates hope that the situation may

be somewhat righted within the next year or two.

There's only been space to sketch out a few select examples of TAP's activities here - it's involved in many other things as well. Those interested in receiving regular updates on TAP activities can get on its Internet announcement mailing list by sending a request to **tap-info request@essential.org**. TAP can be reached by phone at **(215)387-8030**.

[<BI>Lance Rose is an attorney practicing high-tech, computer and intellectual property law in Montclair New Jersey, and is available on the Internet at **elrose@well.sf.ca.us** and on CompuServe at **72230,2044**. He works with shareware publishers, software authors, system operators, technology buyers, interactive media developers, on-line database services and others in the high technology area. He is also author of the book SYSLAW, a legal guide for bulletin board system operators, available from PC Information Group **(800)321-8285**. - Editor<D>]

The following was received from the taxpayer assistance project subsequent to Mr. Rose's article.

**Taxpayer Assets Project
Information Policy Note
May 16, 1993**

RE: Ten firms involved in networking services ask Congress to provide online access to SEC filings.

On May 15, 1993 ten firms, including America Online, Performance Systems International (PSI), InterNex Information Services, Institute for Global Communications, Fantasia Systems, Minnesota Regional Network, Sterling Payot Company, Community Information Exchange (CIX), Knowledge Systems, and Sunnyside Ed Computing wrote to Representative Ed Markey asking that the SEC provide online access to individual EDGAR filings via the Internet through email or ftp. The letter is attached.

May 15, 1993
Representative Edward Markey
Chair, Subcommittee on Telecommunications and Finance

Committee on Energy and Commerce
House of Representatives
Washington, DC 20510

RE: SEC's EDGAR system

Dear Representative Markey:

We have watched with interest the development of the SEC's new EDGAR system, and in particular, the SEC's plans for public access to the EDGAR filings. As organizations engaged in the providing telecommunications and networking services, we are unhappy that the SEC is not providing better methods for citizens to access these filings electronically.

Since economies of scale apply in networking, we are interested in increasing our customer base to decrease our costs. The availability of more public information at a low cost will significantly increase the demand for our services. As you know, the SEC is required by law to provide online access to the EDGAR filings. However, the SEC's contractor for the dissemination of the EDGAR information, Mead Data Central, is currently only providing an online system based upon bulk access to filings, no more than 72 hours old. Not only is this service priced far too high for individuals, but it requires expensive telecommunications and computing equipment to receive the data.

We propose that the SEC provide online access to the EDGAR filings to individuals.

As a starting point, the SEC should make individual filings available to anyone with access to the internet. To make this service as widely available as possible using very simple technology, the SEC could develop a low cost system of dissemination that would provide copies of individual filings by electronic mail or internet ftp. The SEC could do this by providing users with a single file which provides the ID numbers for the companies filing the data, and an index of each firm's filings.

Data users could then send an email message to a server to order individual filings, or they could ftp the data directly.

By allowing the data to be retrieved using email or ftp, the service would be available to the millions of Americans who have full or email access to the Internet, using such services such as America Online, Performance Systems International, EcoNet, PeaceNet, Fidonet, Pathways, MCI Mail, SprintLink, UUNET, AppleLink, Compuserve and others.

A system as outlined above could be provided at a low cost in a short amount of time, and it would vastly lower the costs of receiving SEC filings.

This service would not only benefit citizens who use SEC information, but also organizations like ours, by increasing the demand for our networking services.

Sincerely,

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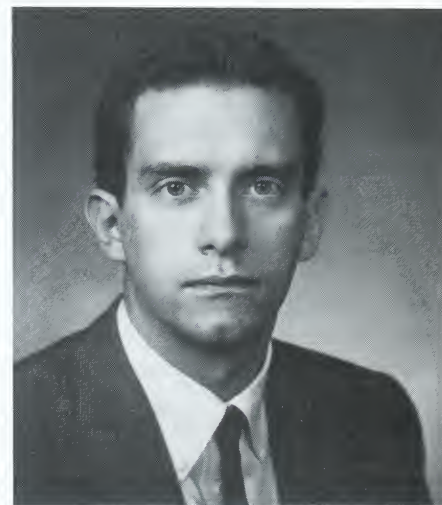
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Arthur Levitt Jr., SEC
John Lane, SEC

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STEVE JACKSON GAMES v. US SECRET SERVICE



By: Peter D. Kennedy

On March 12, 1993, a federal judge in Austin, Texas decided that the US Secret Service broke the law when it searched Steve Jackson Games Inc., and seized its bulletin board system and other computer equipment. The decision in this case has been long-awaited in the computer world, and most observers have hailed it as a significant victory for computer user's freedom and privacy.

I had the fortune to be one of the lawyers representing Steve Jackson and his co-plaintiffs. During the course of the lawsuit, I met many people passionately interested in the issues the case raised. I watched and listened to the discussions and arguments about the case. I've been impressed by the intelligence of the on-line world, and the interest that computer enthusiasts show—especially computer communication enthusiasts—in the law. I've also been impressed and distressed at how the Net can spontaneously generates misinformation. Steve Jackson has spent untold hours correcting errors about him, his company, and the case on both the Net and more traditional news media.

The decision in the Steve Jackson Games case is clearly a significant victory for computer users, especially BBS opera-

tors and subscribers. I hope to give a simple and clear explanation for the intelligent non-lawyer of the legal issues raised by the case, and the significance and limitations of the court's decision.

The facts.

By now, most people interested in the case are familiar with the basic facts: On March 1, 1990, the Secret Service, in an early-morning raid, searched the offices of Steve Jackson Games. The agents kept the employees out of the offices until the afternoon, and took the company's BBS—called "Illuminati"—along with an employee's work computer, other computer equipment, and hundreds and hundreds of floppy disks. They took all the recent versions of a soon-to-be-published game book, "GURPS Cyberpunk," including big parts of the draft which were publicly available on Illuminati.

On March 2, Steve Jackson tried to get copies of the seized files back from the Secret Service. He was treated badly, and given only a handful of files from one office computer. He was not allowed to touch the Illuminati computer, or copy any of its files.

Steve Jackson Games took a nosedive, and barely avoided going out of business. According to Jackson, eight employees lost their jobs on account of the Secret Service raid, and the company lost many thousands of dollars in sales. It is again a busy enterprise, no thanks to the Secret Service (although they tried to take credit, pointing to the supposedly wonderful publicity their raid produced).

After months of pestering, including pressure by lawyers and Senator Lloyd Bentsen (now, as Treasury Secretary, the Secret Service's boss) the Secret Service returned most of the equipment taken, some of it much the worse for wear.

By then, Steve Jackson had restarted Illuminati on a different computer. When the old Illuminati computer was finally given back, Jackson turned it one — and saw that all the electronic

mail which had been on the board on March 1 was gone! Wayne Bell, WWIV developer and guru, was called in. He gave us invaluable (and free) help evaluating the condition of the files. He concluded, and testified firmly at trial, that during the week of March 20, 1990, when the Secret Service still had Illuminati, the BBS was run, and every piece of e-mail was individually accessed and deleted. The Illuminati files the Secret Service had returned to Steve Jackson left irrefutable electronic traces of what had been done — even I could understand how the condition and dates of the e-mail files showed what had happened, and when.

The lawsuit.

Suing the federal government and its agents is never a simple thing. The United States can only be sued when it consents. Lawsuits against individual agents face big legal hurdles erected to protect government officials from fear of a tidal wave of lawsuits.

Amazing as it may sound, you cannot sue the United States (or any federal agency) for money damages for violating your constitutional rights. You can sue individual federal agents, though. If you do, you have to get past a defense called "qualified immunity" which basically means you have to show that the officials violated "clearly established" constitutional law. For reasons I can't explain briefly, "qualified immunity" often creates a vicious circle in civil rights litigation, where the substance of constitutional law is never established because the court never has determined the Constitution's scope, only whether the law was "clearly established" at the time of the violation.

The strongest remedies for federal overstepping are often statutes which allow direct suit against the United States or federal agencies (although these are less dramatic than the Constitution). Fortunately, these statutes were available to Steve Jackson and the three Illuminati users who joined him in his suit against the Secret Service.

The legal claims.

The Steve Jackson Games case was a

lot of things to a lot of people. I saw the case as having two basic goals: (1) to redress the suppression of the public expression embodied in Steve Jackson's publications (including his publication via BBS) and thereby compensate the company for the damage unnecessarily done by the raid, and (2) to redress the violation of the privacy of the BBS users, and the less tangible harm they suffered.

The individual government agents involved in the raid were sued for constitutional violations — the First and Fourth Amendments. The Secret Service was sued under two important laws which embody the same principles as the First and Fourth Amendments — the Privacy Protection Act of 1980 and provisions of the Electronic Communications Privacy Act of 1986. There were other claims, but these were the core.

After the case was pending a year and a half and all discovery completed, the government moved to have the claims against the individual defendants dismissed, claiming qualified immunity. This motion (usually brought early in a case) guaranteed that the trial would be delayed by over a year, because even if the government lost its motion, the individuals could immediately appeal. In December, 1992, the tactical decision was made to drop those claims, rather than suffer the delay, and proceed promptly to trial on the claims against the Secret Service itself.

The Privacy Protection Act of 1980.

In the late 1970's the Stanford Daily was subjected to a fishing expedition conducted by police officers in the Stanford Daily's newsroom. The police were looking for notes and photos of a demonstration the newspaper had covered for a story, hoping the newspaper's files would identify suspects. The Supreme Court held in 1979 that the newspaper had no separate First Amendment right protecting it from searches and seizures of its reporters' notes and photographs if they were "evidence" of a crime the paper had covered — even when the newspaper was not under any suspicion itself. Congress responded in 1980 with the Privacy Protection Act, which, until Steve Jackson came along,

was distinguished mostly by its lack of interpretation by courts.

The Act's wording is rather obtuse, but basically it enacts a "subpoena only" rule for publishers — law enforcement officials are not allowed to search for evidence of crimes in publishers' offices, or more accurately, they may not "search for or seize" publishers' "work product" or "documentary materials", essentially draft of publications, writers' notes, and such. To get such material, the police must subpoena them, not with the much more disruptive search warrant. Every BBS sysop should read this act, located at 42 U.S.C. § 2000aa in the law books, because I can't fully explain it here.

The Act is quite broad, protecting from searches and seizures the work product and documentary materials of anyone who has "a purpose to disseminate to the public a newspaper, book, broadcast, or other similar form of public communication ..." It also has a big exception — if the publisher is the person suspected in the criminal investigation.

The Electronic Communications Privacy Act.

Two provisions of the Electronic Communications Privacy Act (or ECPA) were paramount in the suit. The plaintiffs claimed the Secret Service violated two provisions — one prohibiting unjustified "disclosure and use" of e-mail (18 U.S.C. § 2703; the other prohibiting "interception" of e-mail (18 U.S.C. § 2511(1)).

The parties' positions were fairly simple, and laid out well before trial. As for the Privacy Protection Act, Steve Jackson claimed that his company's publications, both in book form and on Illuminati, were obviously "work product" protected by the Act, and the government had no right to seize them, and therefore owed him money for the damage the raid caused his business. The government replied claiming that (1) Steve Jackson Games' products are not the type of publications protected by the PPA; and anyway, (2) the Secret Service didn't know that Steve Jackson Games was a publisher when it raided its offices; and even then, (3) the Secret Ser-

vice didn't mean to take the books, the books just came along when the computers and disks were taken.

As for the e-mail, Steve Jackson and the other BBS users claimed that the seizure, disclosure, and deletion of the e-mail was both an unlawful "disclosure and use," and an "interception" of electronic communications in violation of the ECPA. The Secret Service replied that (1) there was no "interception" because the e-mail was just sitting there on the hard drive, not moving; and (2) the Secret Service didn't read the mail, but if it did, it was acting in good faith, because it had a search warrant authorizing it to seize Steve Jackson Games' "computers" and to read their contents.

The trial.

When the individual defendants were dropped, the case quickly went to trial. The plaintiffs opened their case on January 29, 1993. The trial took the better part of four days; the witnesses included now-familiar names: Timothy Foley and Barbara Golden of the Secret Service, William Cook, formerly of the U.S. Attorney's office in Chicago, Henry Kluepfel of Bellcore, Steve Jackson and the BBS users Elizabeth McCoy, Walter Milliken and Steffan O'Sullivan, and WWIV master Wayne Bell.

At trial, Judge Sparks was introduced to the labyrinthine E911 investigation. We also set up and ran Illuminati as it looked on March 1, 1990, and Steve Jackson walked Judge Sparks through his BBS, lingering on discussion areas such as "GURPS Old West" to give the Judge a taste of the scope and breadth of BBS publication and communication which the Secret Service had shut down. The judge appeared upset by the callous and suspicious manner in which the Secret Service had treated Steve Jackson, and with the Service's apparent disregard for the effects the raid might have on the company.

The decision.

Judge Sparks decided the case in February, 1993, in a long written opinion. The full text of the opinion is available on the **Internet at [ftp.eff.org](ftp://ftp.eff.org)**, and on

Illuminati itself (**512-447-7866**). I recommend all sysops and BBS users to read it, as it is one of the very few legal rulings specifically addressing bulletin boards and electronic mail.

First, the bad news: Judge Sparks accepted the government's argument that the seizure of the BBS was not an "interception" of the e-mail, even mail that had not yet been read. Essentially, he decided that the definition of "interception" implicitly means "contemporaneous with the transmission"; that is, for there to be an interception, the government must position itself in the data stream, like a conventional wiretap. Since the e-mail was temporarily stored on the BBS hard drive, he held there was no contemporaneous interception.

Ruling that there was no interception means two things. First, the plaintiffs did not receive the \$10,000 minimum damages a violation of the "interception" law provides, even though the judge found the Secret Service had not acted in good faith. More importantly, it lowers the standard for seizing BBS e-mail — and threatens to lower the standard for the seizure of all electronic communications which reside long enough in computer memory to be seized (which is most all computer communications, as far as I understand it). To "intercept" wire communications you need a court order, not just a routine search warrant. This ruling (which technically only applies in the Western District of Texas) means law enforcement is not limited in its seizure of BBSs by the higher standards required of wire-tapping.

Now, the good news: the plaintiffs won the "disclosure and use" argument under the ECPA, getting back most of what was lost in the "interception" decision. First, Judge Sparks found the obvious: that while the Secret Service had Illuminati they or their agents read and deleted all the e-mail on Illuminati, including the plaintiffs' mail — persons the Secret Service admittedly having no reason at all to suspect of any illegal activity.

Next, he rejected the Secret Service's argument that its agents were acting in "good faith." While he didn't list all the

reasons, quite a few are supported by the evidence: the Secret Service's investigation was "sloppy", he said, and there was no attempt to find out what Steve Jackson Games did as a business; the Secret Service was told the day of the raid that the company was a "publisher," and refused to make copies or return the files for months after they were done reviewing them; and the Secret Service apparently allowed the private mail of dozens of entirely innocent and unsuspecting people to be read and trashed.

The judge ruled that Steve Jackson, his company, and the three Illuminati users who joined Jackson in the suit were each entitled to an \$1,000 award from the government, as provided by the ECPA.

The Privacy Protection Act was pretty much a clean sweep. While the judge and Steve Jackson still differ over how much money the raid cost the company, the court's ruling was squarely in Jackson's favor on the law. Although unconventional, the court found that Steve Jackson Games' publications were clearly covered by the Act, should not have been seized, and should have been promptly returned. At trial, the Secret Service agents had freely admitted they knew nothing about the Act. Former U.S. Attorney William Cook claimed he knew about it before the raid, but decided (without any investigation) that Steve Jackson Games wasn't covered. The Privacy Protection Act (unlike the ECPA) allows no "good faith" excuses, anyway, and since the Secret Service was repeatedly told on March 1 and afterwards that the company was a publishing business there was no defense for the seizure of "GURPS Cyberpunk" or the other book drafts. Most of the over \$50,000 awarded in damages was due to the violation of the Privacy Protection Act.

Steve Jackson Games publishes traditional books and magazines, with printed paper pages. Is the BBS operator who publishes only on-line articles protected, too? It's a question Judge Sparks did not need to address directly, but his opinion can and should be read to include the on-line publisher. The

court's opinion includes the BBS files as material improperly seized, and the Act specifically includes work product in electronic form. Publishing via BBSs has become just like publishing a "newspaper, book, or other form of publication..." — the only source of news many people get.

If the Privacy Protection Act is broadly understood to encompass electronic publishing (as it should) it should provide meaningful protection to innocent sysops whose boards may be used by some for illegal purposes. It should prevent the "preventative detention" of BBSs — where boards are seized in investigations and held indefinitely — which seems to be one crude means used to attack suspected criminal activity without bothering to actually prosecute a case. It should also force law enforcement to consider who the actual suspect is — for instance, in the recent spate of seizures of BBSs for suspected copyright violations. The Privacy Protection Act should prevent law enforcement from seizing a sysop's board who is not suspected in engaging or condoning illegal activity.

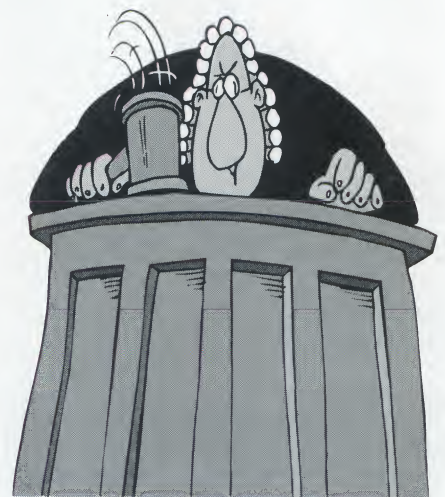
Those of you who have followed this case will note how little significance I've given the "Phrack" investigation and the overvaluation of the E911 document. Of course the Secret Service misunderstood or exaggerated the importance of the purloined E911 document, and were chasing imaginary goblins.

The real significance of the Steve Jackson Games case, however, was not knocking holes in that one investigation (the Neidorf trial effectively did that), but taking a solid step to set firm, discernable limits for criminal investigations involving computer communication. To focus on the specific foibles of the E911 investigation is to miss the importance of what the Secret Service really did wrong. Out of ignorance or callousness, they ignored the legal rights of people not even suspected of crimes; people who simply shared common electronic space. There are and will continue to be legitimate computer-crime investigations. The closeness that people live in Cyberspace, though, means the government must learn ways to conduct investigations without vio-

lating the rights of all the innocent members of the on-line community. In March 1990, the Privacy Protection Act said that Steve Jackson could write and publish his books without having them seized; the Secret Service didn't know that. In 1990, the Illuminati users had the right not to have their e-mail seized and read without at least being suspected of a crime; the Secret Service apparently didn't know that, either. Now they do, and hopefully the word will spread to other government agencies, too.

(As of this writing, there is still no decision whether the Secret Service (or Steve Jackson, for that matter) will appeal Judge Spark's decision.)

[Peter D. Kennedy is an associate with the Austin, Texas law firm of George, Donaldson & Ford, specializing in civil litigation. George, Donaldson & Ford represents national media, technology, and other corporate and individual clients in a variety of civil litigation, including libel and invasion of privacy defense, constitutional law, intellectual property, commercial and employment litigation. George, Donaldson & Ford, 114 W. 7th Street, Suite 100, Austin, Texas 78701; (512)495-1400 voice; (512)499-0094 fax; E-mail: gdf.well.sf.ca.us - Editor]



COMMERCIAL SERVICES

DELPHI ANNOUNCES ONLINE GAMES

General Videotext of Cambridge Massachusetts has announced addition of online multiplayer games to the DELPHI online service. The new "Games Room" area allows callers to play multiplayer games against each other with colorful graphical interfaces. Games include classic board and card games such as Go, Chess, Cribbage, Gin Rummy, and Crazy Eights. They also offer strategy games such as Conquest, a shareware strategy game similar to the RISK board game, Command HQ, Empire Deluxe, and The Perfect General.

Most of the games include a chat feature allowing players to talk while playing. Additionally, a message forum supports questions and discussions about games.

Delphi has two membership plans: the 10/4 plan is **\$10** per month and includes 4 hours of connect time with additional time charged at **\$4** per hour. The 20/20 Advantage Plan is **\$20** monthly and includes 20 hours of connect time with additional time available at **\$1.80** per hour. Through a special trial membership offer, **Boardwatch readers can get five free hours on the service by dialing (800)365-4636 and entering BW34** as a password. General Videotex Corporation, 1030 Massachusetts Ave., Cambridge, MA 02138; **(800)695-4005** voice

UPDATE ON GENIE

by Donn King

Each of the commercial services has a unique appeal to its members. One of GENIE's major drawing cards is its Multi-Player Games area. GENIE recently introduced a new game, and several of the existing ones are undergoing upgrades.

CyberStrike strides on stage

CyberStrike takes full advantage of the IBM compatible with at least a 20MHz, 386SX or better and VGA. It is described as "a sophisticated futuristic shoot'em up" featuring 3-D VGA graphics, polygon animation and explosive digital sound effects. By means of a downloadable front-end program, players control a walking CyberPod in a virtual reality environment.

If you strapped yourself into one, you would join one of four team battling for territory in one of several CyberCities. You would travel down streets, through tunnels and over bridges. You would climb buildings and leap to another if you wished. You would seek out and destroy enemy pods (real people, other GENIE users signed in elsewhere).

Your pod could install up to nine expansion modules from a selection of over forty, modules which could provide anything from increased firepower to the ability to actually modify the specifications of the CyberCity.

Simutronics designed the front-end program to ease learning for first-time users, with intuitive controls accessed by mouse. The game also includes a Training CyberCity for rookies to taste first blood.

GENIE members move around the system by entering either keywords, or the letter M (for move) followed by the "page" number. Those wanting to try CyberStrike can either enter **CYBERSTRIKE** or **M1380**. As with most of the Multi-Player Games, game play costs only regular connect-time rates, currently **\$6** per hour at 2400 baud or less between 6 p.m. and 8 a.m. (GENIE also charges a flat **\$4.95** per month for basic access. Much of the system, including e-mail and most RoundTables, can be accessed for no charge other than the monthly fee). At press time, CyberStrike was still in open beta testing.

The menu on page 1380 looks like this:

GENIE CYBERSTRIKE Page 1380
CyberStrike (tm) by Simutronics

1. Instructions and Information
2. [*] Download Required Front End Software
3. Play CyberStrike!
4. [*] CyberStrike Software Libraries
5. [*] Feedback to Simutronics
6. Multiplayer Games Roundtable

Options marked with a [*] currently are available as GENIE Basic services (no connect-time charges).

Air Warrior gets a face lift

Air Warrior, a long-time Multi-Player Game from Kesmai, is beta testing a new IBM PC front-end portending new levels of realism and better responses to controls.

Players in Air Warrior fly World War II vintage fighters in live dogfights against members of any of three nationalities. In addition, ground vehicles such as tanks and jeeps can be commanded. Heavy bomber aircraft can be commanded and staffed by up to seven live crew members. Paratroop aircraft and dive bombers are also simulated.

Air Warrior also has a World War I theater and aircraft as well as Korean War vintage Jet aircraft and the ME-262 jet.

Because it is still in beta test, it's not yet clear what the hardware requirements will be; programmers are still writing documentation. I couldn't get the software up and running, but my machine is a 386SX of only 16 MHz with only 1 meg of memory (remember when that was state of the art?). The old front-end program still gives impressive interaction, although by the time you read this you will need the updated software.

To get the front-end program of your choice (available for Macintoshes, IBM PCs and compatibles, and Amigas), **enter M871, or enter keyword AIR and choose option 1 from the menu.**

GENIE casts Internet wider

GENIE has offered access commercially to Internet e-mail for several months

now, although informal discussion in bulletin boards seems to indicate that many users considered the service overpriced (they still describe the gateway as "in beta"). For United States subscribers there is a one-time charge of **\$2.00** to register onto the gateway. Then each letter sent or received costs 30 cents for each 5,000 characters, about the equivalent of one single-spaced 8.5 by 11 inch page of paper.

Although the service has not expanded to include full Internet access, GENie recently opened the Internet RoundTable to provide support for the gateway and avenues for requesting FTP transfers and other services.

The bulletin board area explains to members how to use the Internet gateway on GENie, but it also includes several topic areas to teach new Internetters the ropes, regardless of their means of access. For instance, although GENie members do not have direct FTP service through GENie, they can learn the rudiments of using FTP—handy for members gaining access directly to the Internet through their jobs.

Other topics cover USENET news groups, FINGER, GOPHER, WHOIS and other Internet utilities. Members of the RoundTable may request that a file be found via FTP or the text of a USENET feed be captured. The resulting file will be uploaded to the Internet RT software library, which can then be downloaded by any interested member at regular GENie connect-time rates.

Members can get to the new RoundTable by entering either **INTERNET-RT** or **M1405**.

Bits and pieces

GENie gained a late entry in the scramble to provide electronic access to the White House. Enter either **WHITEHOUSE** or **M1600** to find a bulletin board for discussing the Clinton Administration, a software library containing official White House press releases and a menu option for sending a letter to 1600 Pennsylvania Ave.

Dragon's Gate is a fantasy, multi-player, text-based adventure game with over

20 races and 8 classes to choose from. "Elders" are available nightly from 7 p.m. to 1 a.m. EDT to answer questions or help with problems. Organizers have set aside Tuesday nights especially to welcome newcomers. Enter **M915;3** to explore.

If you're not a GENie subscriber already, follow these instructions to sign up. (These instructions apply to U.S. and Canada only; e-mail me (address below) for details for international access.)

1. Set your communications software for half duplex (local echo), at 300, 1200 or 2400 baud. GENie literature says you can set for No Parity, 8 Data Bits, 1 Stop Bit, but I have had more luck setting up all sessions with GENie at Even Parity, 7 Data Bits, 1 Stop Bit.

2. Dial toll free: **1-800-638-8369** (in Canada, call 1-800-387-8330). Immediately upon connection, type **HHH** (no need to hit the <RETURN> key).

3. When you see the **U#=#** prompt, enter **SIGNUP** then press <RETURN>. Note: the system at this point is very slow; be patient, it will load the signup software and get to you.

4. Have a major credit card ready. In the U.S., you may also use your checking account number. However, GENie recently began a surcharge on automatic drafts of checking accounts; a credit card is the best way to go.

Write to **DKING%PSTCC.DNET@NET.VANDERBILT.EDU** with questions about GENie as well as comments and observations.

THE SIERRA NETWORK - ONLINE MULTIPLAYER GAMES WITH A VENGEANCE

Sierra Online was one of the earliest into the computer game business with a program titled Mystery House for the Apple II. They've produced games for virtually every PC platform since, and today own 23% of the dollar market for PC games. Current titles include the

SpaceQuest series, the KingQuest series, and most recently, a series of games featuring ex-LA police chief Darryl Gates titled PoliceQuest. Their flight simulator games include Ace of the Pacific and Red Baron - a classic World War I shoot 'em up.

In 1991 they began experimenting with an online service featuring their games. In October 1992 they actually began marketing it a bit with version 2.0 of their online software. Today, The Sierra Network (TSN), a subsidiary of Sierra Online, is plowing some new ground in online interactive games where callers not only can play games online, but play them against each other. And the graphical interface is probably the most impressive of this genre.

The system, while purportedly for online gaming aficionados, does offer some of the functions of any online service, including electronic mail, bulletin board conference areas, and online chat. In fact, most games allow chat between participants and in some ways, the actual act of gaming becomes secondary to the social elements of the games.

One of the most interesting elements of this is a graphical representation of the caller. You actually make up a character with a kind of software Mr. Potato Head function to select sex, head shape, nose, eyes, glasses, clothes, hats, hair styles, jewelry etc., to create your own reasonably unique visage. At any point in most games and certainly chat, you can click on someone and see a bit of what they look like and where they are from geographically. These additional cues subtly and not so subtly alter the online experience.

Not that the characters truly represent the callers. A fifty-year old Manhattan advertising executive may look for all the world like a nine-year-old girl from Kansas - and versa vice.

The program requires extensive software on the caller's end, beyond anything else going. The terminal program requires easily four times the disk real estate of the Prodigy terminal program for example, and nearly as much as a bare bones OS/2 installation. Plan on having 8.5 MB free. And the program

PCBoard



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To get a BBS software package any better than this, you'd have to write it yourself.

This long-awaited version of PCBoard is the most configurable, fastest and most *powerful* PCBoard ever. Features added include RIPscrip graphic support, Real-Time Node Chat, File Attachment to a Message and many other long-awaited enhancements and additions.


But there's more.

With the optional new PCBoard Programming Language, or PPL, the configuration options are virtually limitless. The BASIC-like command structure of PPL allows you to write your own modifications, routines, or even applications right into PCBoard, giving your enhancements the same look and seamless feel of native PCBoard commands.

For a detailed list of PCBoard's newest additions, call our support board, Salt Air BBS at (801) 261-8976 and type WHATSNEW at the Main Command prompt or call our office at the numbers listed below.

If you can't do it with PCBoard, chances are you can't do it with anything.

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 **ARNET**
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For Information - (801) 261-1686
For New Orders - 800-356-1686



itself requires 550KB of RAM, pretty much precluding it's use with anything else at all. We had to strip CONFIG.SYS and AUTOEXEC.BAT pretty much down to parade rest to get this thing in operation. A good deal of the work is done on the terminal end as well, and callers playing Red Baron from a 486 50MHz, for example, enjoy a distinct advantage over callers using a 16MHz 80386 machine. Your old hardware can literally get you shot down in flames. Minimum requirements include an 80386 machine, and VGA graphics.

The program comes on four 3.5-inch diskettes, and the installation is actually pretty straight forward although the drives grind away pretty impressively to get it up. The highest speed

currently supported is 2400 on the modem connection, and the installation includes a lookup table to get the nearest local number for your area code.

When you start the system, you'll encounter the TSN title screen followed by a charming picture of a house with satellite dish bouncing signals off a satellite to a big office building. The whole thing is reminiscent of illustrations of Hansel and Gretel. Once online, a theme park view combining Candyland with Hansel and Gretel covers the screen. You can click on different areas such as the Post Office, the Mall, Town Hall etc.

By clicking on a mountain in the background, you access Medievaland. This

is somewhat a misnomer because everyone online terms it Yserbius, which is the adventure game series you access there. This brings up a menu of different areas. All are actually different implementations of the same Yserbius adventure game.

Yserbius is adventure gaming like you've never done it before. You create characters, complete with whatever funny nose you like, and form teams to enter the adventure game, slaying an assortment of dragons, wolves, et. al along the way. You can converse with your teammates by simply typing to them, and all the various swords, bucklers, potions, lotions, and magic spells are quite graphic. The scene is three dimensional. It is a basic form of virtual reality WITH the interactivity of multiple cooperative players - and you can get quite drawn into it. According to TSN, about 90% of their callers spend most of their time in Yserbius.

But the system has dozens of other games to choose from. Another popular one is the online version of Leisure Suit Larry. Again, you can make up a character, as sleazy looking as you prefer, and go mingle with other callers in the casino or chat areas - a multiplayer version of the popular Leisure Suite Larry game by Alan Lowe.

Undoubtedly the chat/adventure game innovation is the draw for this service. But we could hardly stay out of a bit different game. In Sierraland, we found The Red Baron. This works EXACTLY like the stand alone Red Baron game where you are actually in a flight simulation using World War I aircraft to try to shoot down other airplanes. But in this case, the other aircraft are manned by other callers. The graphics are excellent, though we couldn't tell who was who most of the time. The other drawback was that dogfights were limited to maximum sets of four players. We think larger play groups would be in order.

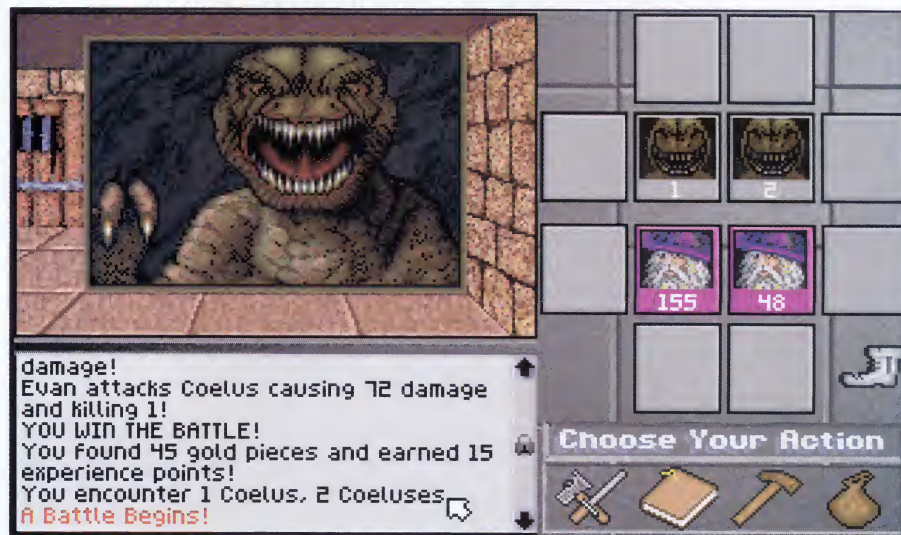
The service has grown impressively enough in the past six months that American Telephone and Telegraph has made an offer to acquire an equity interest in it. So far, the major effect has been to strike everyone in the company deaf, dumb, blind, and amnesiac over how



many people are on the service, how fast it is growing, what it runs on, or what time it is. It really is incredible to watch a group of people in a business just lose their water over the smell of money.

And the service could certainly shape up as profitable - assuming the AT&T cloud doesn't kill it. The basic plan is \$12.95 per month for 30 hours of access. Since this doesn't allow access to SierraLand, LarryLand, or MedievaLand, this offer is somewhat disengenous and I would be surprised if they had anyone at all on the service under this plan. You can't even send e-mail at this price. Sierra Stamps are required for that at \$2.00 per month, and each of the "Lands" you will want to access are \$4 per month per land. That all adds \$14 in options to the \$12.95 per month - basically \$26.95 per month. But additional non-prime hours are a very reasonable \$2 per hour and even daytime access is just \$7.

The service does eat hours, and some of the delays in waiting for messages, waiting to get into "lands" and generally navigating from screen to screen are horrendous. Almost every time we were on, some technical glitch promoted us to a bare command line at sometime during the session. But with all that, this service really does convey a sense of place better than anything we've seen online. The caricature characters add visual cues that ought to be superficial, but in practice actually do change the experience in a subtle but powerful way. The service basically sets a new high water mark in interactivity and graphics. And yeah, it's fun. They currently offer new subscribes the software and three free hours on the system for the price of a call to their toll free (800)SIERRA-1 number. The Sierra Network, 41486 Old Barn Way, Box 1550, Oakhurst, CA 93644; (209)642-0700 voice; (209)642-0885 fax.



INTERNET

PHOTOS FROM THE SKY - NASA SPACE SHUTTLE EARTH OBSERVATION PROJECT'S PHOTOGRAPHIC DATABASE

by Jack Rickard

One of the treasures produced by our government resides in a vast trove of photographic materials created by satellite, exploratory spacecraft, and astronomical sites. Some of these photos just aren't available from private sources and there are literally millions of them

scattered across various archive sites in the land. Unfortunately, few benefit from them because few know they are there, and most of those who do haven't a clue how to pick out the photo of interest from the millions archived.

One of the most fascinating efforts at making at least a tiny sliver of this pile of silver available is the Space Shuttle Earth Observations Project's Photographic Database. The system operates from a DEC system at the Lyndon B. Johnson Space Center in Houston and it is available over the Internet by telnet. In short, it provides a catalog of photos taken of earth from the space shuttle and the photos themselves in digital format. The system holds hundreds of



Philippine's Manila Bay with Mount Pinatubo

these photographs available for file transfer.

The photos are in a digital format developed by AT&T for their TARGA image board, and appropriately enough, everyone calls it TARGA format. The files normally end in a **.TGA** file extension. They are fairly enormous, as detailed color photographic images tend to be - typically in the 3.5 MB range. This

brings up the problem of transferring the files.

The only way we found to access the system was by telnet. It doesn't support ftp logons as a matter of course (more on that in a minute). To access the system, enter telnet sseop.jsc.nasa.gov. It will ask for a logon name - enter **PHOTOS** and at the password, again enter **PHOTOS**. You will have a chance to enter

your last name and the state you are calling from a little later in the process.

From the main menu, entries are available to look up shuttle photographs by latitude and longitude, geographical location, or shuttle mission. The catalog itself works admirably well, and appears to contain hundreds of photos from around the world, the Soviet Union, Middle East, Japan, Asia, Ha-

waii, most of the United States, etc.

The **IMG** selection allows you to simply browse the database and select a file. A **DL function** allows you to download. This is where things get a little complicated.

Telnet is an interactive login function. It does not typically support file downloads directly. A number of UNIX BBS packages have offered file transfer protocols that more or less work over a telnet connection if you are using a terminal program at your end that supports a protocol. But most of them don't work - with the exception of KERMIT.

The problem with KERMIT is speed. Despite the fact that we were logged into Colorado Supernet at 14.4kbps, a KERMIT file transfer protocol over telnet MIGHT produce a transfer rate of 165kbps downwind with a wind and following seas. A 3.5 MB file transferred at 165cps takes almost exactly **THE REST OF YOUR NATURAL LIFE** to get from there to here.

The system offers some other options - all a little quirky. First, you can have the file e-mailed to you. But you have to be on DECNET or know how to address it out gateways to the Internet. We couldn't figure it out. Second, you can FTP the file. Now this gets a little strange. You can't logon to the service with FTP, you have to use TELNET. And TELNET doesn't have FTP, but you can login with telnet and the system will FTP it to you??? Actually yes. It asks you for the IP number of the system you are calling from (system name appears to work fine). It then asks you for a filename where you want the file stored on your host system. Finally, it asks if they need to "logon" when ftping your system. We said yes and that seemed to work. If you say yes, you will wind up facing the ftp logon **BACK** into your host system. You **DON'T** want to use ANONYMOUS here. We entered our normal logon name and password, and the NASA system sent a file by ftp to our host service while we watched. When we closed the whole thing down and were back in our host account, we found the files in our **HOME** directory waiting for us. That was why it needed to logon as our real logon account in-



San Francisco Bay

stead of anonymous FTP. It actually placed the files in our own home directory. While we have never seen this sort of ftp process from telnet before, it worked quite well actually. When we logged off the service, the files were waiting in our home directory. We could then download them to our own PC using the somewhat more rewarding ZMODEM protocol via an sz filename command at a more gratifying 1600 cps.

The system sports about 200 photographic files which you can locate by geographic location, shuttle mission, or even latitude/longitude. These are not greyscale satellite data images, but data files containing actual quality color photographs taken from the shuttle. Our cover this month sports a shot of the Colorado front range for example. We took an interest in a shot of Manila Bay in the Philippines showing Mount Pinatubo, the mountain that got a little upset a year or so ago. A shot of San Francisco Bay shows the bridges, and

even buildings making up the city. Unlike satellite photos, these aren't all straight down shots. Some show the curvature of the earth, sunrise from the shuttle, and oblique views of various landmarks, smoke over Kuwait, etc.

All in all it is a treasure trove of quality photographs of earth from the shuttle. You can also order the photographs by mail from:

EROS Data Center
User Services Section
Mundt Federal Building
Sioux Falls, SD 57198
Attn: Aljean Klaassen
Phone: (605)594-6151
FAX: (605)594-6589
E-mail: klaassen@dg2.cr.usgs.gov

or

Technology Applications Center
University of New Mexico
Albuquerque, NM 87131



Colorado Rocky Mountain Front Range

Attn: Amy Budge
Phone: (505)277-3622
FAX: (505)277-3614
E-mail: abudge@spock.unm.edu

The man responsible for handling questions or problems is Dr. David E. Pitts, Manager, Flight Science Branch, SN15, National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, TX 77058;

PLUG IN, LOG IN, TUNE IN - INTERNET TALK RADIO: The message is the medium

By Kevin M. Savetz

From the depths of cyberspace, a new medium has emerged. "Internet Talk Radio," is a new information service that is blurring the line between the online world and traditional media.

Internet Talk Radio (ITR) distributes weekly "radio shows" via the Internet's anonymous FTP service. Each show - a half hour or an hour long - can be downloaded to a workstation or home computer and played using audio playback software. Unlike a myriad of other Internet newsletters and journals, Internet Talk Radio is the only one that actually speaks.

Each show is composed of several .au format sounds which can be played on a Sun or NeXT workstation, among other machines. Personal computer users can also listen in, but (depending on the computer) you may need to convert the ".au" sounds into a format more familiar to your hardware.

All this talk comes at a price, however. A typical hour-long radio show consumes a whopping 20 megabytes of disk space. Despite its slow sampling rate of 8KHz, ITR is a memory hog.

Carl Malamud is the founder of ITR. "The idea for ITR came from my frustration with the trade press. I knew they weren't providing the information I wanted and was looking for an alternative." He notes that the trade press focuses on marketing and reviews, leaving a gap for a general-interest, technically-oriented publication for Internet users. "I couldn't start a magazine because it takes money to print and distribute a magazine," he said. Malamud turned to the Internet as a general-purpose distribution method.

"I looked at the trends in multimedia support on the Internet, at the number of users with more and more bandwidth and bigger disk drives, and decided to give 'radio' a try," he said.

Some net users have criticized the talk radio concept as a grandiose waste of network bandwidth, given the fact that the same information in text format could fit into only a few kilobytes. "The reason you get audio information from a \$3,000 (or \$30,000) computer," Malamud said, "is because ultimately this gives you a very new medium. We're not trying to replace radio, just as the trucks didn't replace the railroads and the telephone didn't replace the telegraph. There are things we can do that you can't do on a radio, like go interactive or add WAIS databases to support a program, or use general-purpose languages like PERL to make an audio-on-demand server..." It is the versatility of ITR that is its selling point.

ITR's parent company, Internet Multicasting Service, isn't doing this just for glory. Each program carries sponsors, and a minute of each program is given to acknowledge the supporting vendors. The blurbs aren't quite commercials; they resemble public TV's post-show sponsor messages. ("Brought to you by a grant from Frobnitz Corp., and viewers like you!") Current sponsors include Sun Microsystems and O'Reilly & Associates book publishers.

DON'T TOUCH THAT DIAL...

For the most part, ITR consists of interviews. Whether they're talking with the "Geek of the Week" (a featured member of the technical community) or focusing

on "the new American reality" in the "Tech Nation" show, it all boils down to people conversing with each other. Like the name says, Internet Talk Radio parallels its mainstream counterpart. Except ITR is a lot more nerdy.

TechNation is a weekly radio show that focuses on "the new American reality" - that the U.S. has become the "tech" nation. The premise is that this new reality is causing introspection - "Americans are looking at who they are and where they are going."

Tech Nation is hosted by Dr. Moira Gunn, a former NASA scientist and robotics engineer. She focuses on uncovering core issues as well as important technology announcements. Unlike "Geek of the Week," which is only distributed via the Internet, Tech Nation is broadcast over the Public Radio Satellite System, which makes the show available to nearly 600 radio stations in the United States. The show has been produced in the studios of KQED in San Francisco since 1987, and became part of ITR's schedule in March of this year.

Interviews on Tech Nation have included Dr. Linus Pauling, two-time Nobel Prize Winner; Jane Metcalfe & Louis Rossetto, Editors/Publishers of "Wired" magazine and Bill Koch on winning the America's Cup. Occasionally the program seems narcissistic, like when Gunn interviewed Carl Malamud, the creator of Internet Talk Radio.

"Geek of the Week" is a weekly interview with prominent members of the technical community. The show focuses on "sophisticated discussions of issues facing the Internet, networking, and computing." Malamud calls it "the intelligent alternative to today's trade press."

In April, Malamud introduced a cousin to ITR, called Internet Town Hall, which includes audio recordings of speeches. In the first week they released speeches by the Dalai Lama, Bob Dole, Hershel Shanks on the Dead Sea Scrolls, and the hearings by Congressman Markey on encryption and privacy.

Internet Town Hall programs are good

to pick and choose from. Unlike ITR, Town Hall doesn't necessarily focus on computers and technology. One program consisted of Secretary Bruce Babbitt presenting Clinton's environmental program to the National Press Club. This sort of archival sound information could prove useful for those of us who don't want to watch C-SPAN all day. If you find you need information from a speech given last month, Town Hall might be the forum to find it.

LISTENING IN...

The programs sound good, considering the medium is in its infancy. After a snazzy musical introduction, Malamud announces (in his best DJ voice,) "This is Internet Talk Radio, flame of the Internet." Sound quality isn't great. Most of one program suffered from speaker-phone syndrome: it sort of sounded like the voices were coming from the middle of an empty room. Malamud said the sound quality is improving "as we learn how to use our equipment and adapt it to the realities of this rather strange publishing platform."

Sound quality aside, the programs are indeed interesting to listen to. It's nice to be able to hear the voices behind the technology. One interview featured Brewster Khale, the father of WAIS, Inc. and the Wide Area Information Server. Conversation flows neatly from one topic to the next. The interview breaks for an offbeat selection such as "The Incidental Tourist" (restaurant reviews, one which featured ways to achieve gastronomic heights in the basements of Asian Department stores,) a book review, or "Name that Acronym," delivering an "arcane acronym to reverse engineer."

Sun workstation listeners only need the system's "audiotool" program to listen in. Listening on a PC requires SoundBlaster or some other audio source, plus a program that plays ".au" files or converts them to ".wav" files. Macintosh users need a program to convert ".au" to "audio IFF" format. Everyone needs enough disk space and memory to hold 5-megabyte chunks of the program. (Information on finding the free conversion utilities is available from **info@radio.com**.)

WHERE TO FIND INTERNET TALK RADIO

Internet talk radio files are available from a variety of anonymous FTP sites worldwide. You should be able to find them at the following sites, but check the updated list to find your closest site.

Northern Arizona University, Flagstaff, AZ: **ftp.nau.edu** (134.114.64.70) in directory **/talk-radio**.

Oregon Graduate Institute, Beaverton, OR: **cse.ogi.edu** (129.95.20.2, 129.95.40.2, or 129.95.46.2) in directory **pub/talk-radio**.

University of Oregon, Eugene, OR: **ftp.uoregon.edu** (128.223.32.35) in directory **/pub/internet-talk-radio**.

ITR is also available via the World Wide Web in **http://www.ncsa.uiuc.edu/radio/radio.html**.

As compression technology advances, ITR (and its eventual copycats) will be able to stuff longer programs into less space. This may be essential to the proliferation of the medium. At about half a minute of sound per megabyte, ITR doesn't have time to waste.

FOR MORE INFORMATION...

For more information, send electronic mail to **info@radio.com**. You'll automatically receive the <basic ITR information. For an updated list of sites that carry ITR, send e-mail to **sites@radio.com**.

The latest information, including program schedules, is available on the Usenet group **alt.internet.talk-radio**.

Kevin M. Savetz is a writer and Internet junkie living in Arcata, California. His e-mail address is **savetz@rahul.net**.



Only One Multi-User BBS Gives You True Freedom.

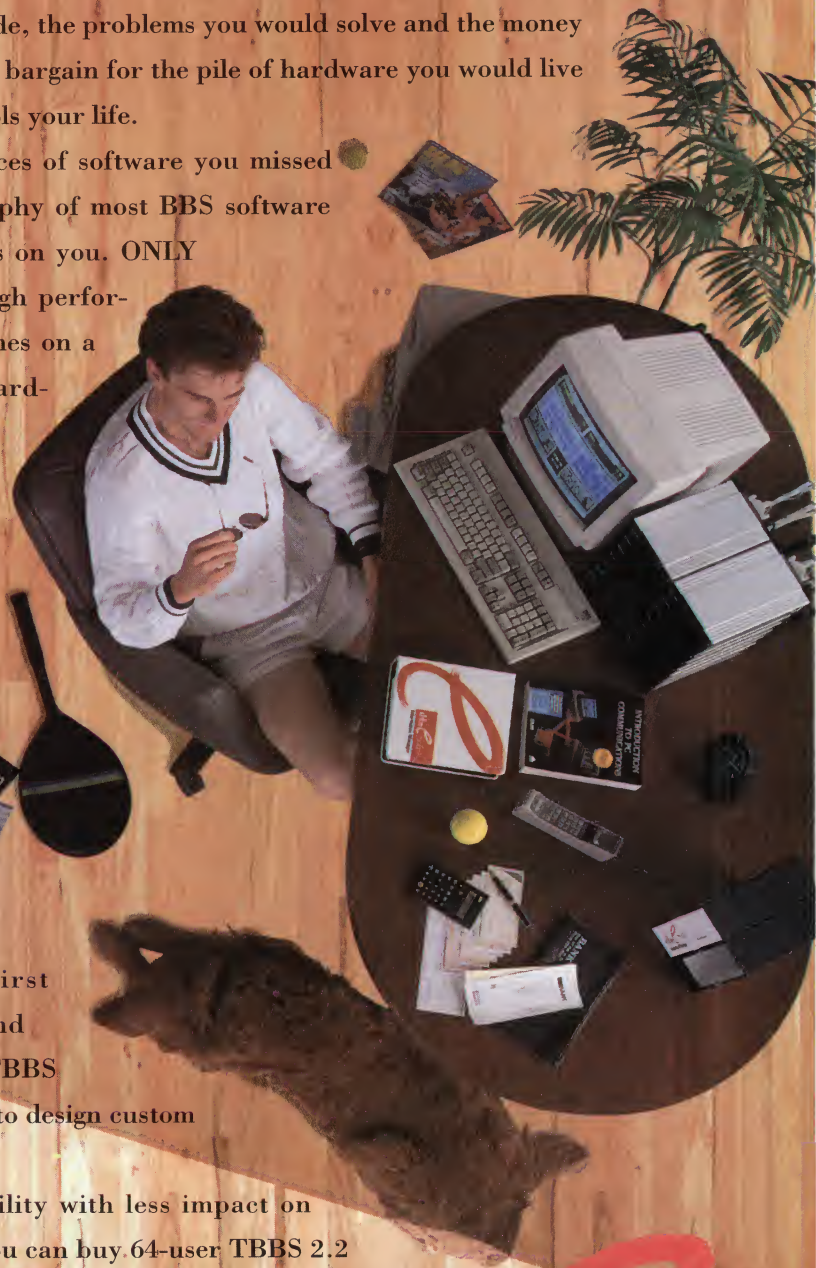
You started out to build a multi-user BBS. You had dreams about the service your system would provide, the problems you would solve and the money you would make. But you didn't bargain for the pile of hardware you would live with every day and now it controls your life.

As you compared the prices of software you missed the fact that the design philosophy of most BBS software forces many hardware decisions on you. ONLY TBBS allows you to achieve high performance with 64 high speed lines on a single CPU with NO custom hardware. And only TBBS gives you the option of integrated xBASE databasing with the TDBS expansion module and compiler.

True freedom is the ability to spend your time as you wish. Talk to real multi-user BBS sysops. You'll notice that only TBBS operators talk first about ideas, not hardware and software. For over ten years TBBS has provided them the freedom to design custom systems they can live with.

No one gets more capability with less impact on their life than a TBBS sysop. You can buy 64-user TBBS 2.2 for \$1,995 (32-user \$1,495, 16-user \$895, 2-user \$295) and use the money you saved on hardware to celebrate your success.

Call 303-699-6565 for more information and access to a demonstration system.



WAIS RELEASES NETWORK PUBLISHING PRODUCTS

by Bill Gram-Reefer

At a recent news conference, Wide Area Information Services Inc. (WAIS), after extensive product development, and testing by Internet users for more than two years, announced its formation as a new company and unveiled its initial products. WAIS Server for Unix and WAIS Workstation for Unix are the company's first commercial-quality network publishing applications that enable local- and wide-area network (LAN/WAN) publication of structured and unstructured data, including text, news or satellite feeds, images, and sound. The cost of the software ranges from **\$10,000 to \$50,000**.

Backed by a consortium of Apple Computer, Dow Jones News, Pete Marwick, and Thinking Machines, WAIS also announced that Sun Microsystems plans to cooperatively market WAIS' products, as WAIS becomes an independent vendor for Sun products. The products support use on Sun 4.1x and Sun Solaris 2.1 and NeXT machines. Upcoming support for DEC Alpha, IBM RS 6000, HP Unix, and other Unix platforms is planned. Software and documentation is available via ftp; support will be handled primarily by e-mail. Prepayment is required.

Based on international standards such as Z39.50 and TCP/IP, the WAIS system represents an open network publishing system that lets users find and retrieve information anywhere on a LAN or WAN, including the ability to access participating WAIS servers on the Internet. WAIS is currently used by people in more than 28 countries to search over 400 information sources around the world. Current customers and developing partners include Perot Systems, the Library of Congress, the Environmental Protection Agency, U.S. Geological Survey, Encyclopedia Britannica, Rice University, Lockheed, Johns Hopkins University, and TRADE.

Similar, in many respects, to Gopher and like products designed for indi-

vidual use, the WAIS products add many features to the Z39.50 data-access protocol. The WAIS Server provide a powerful information delivery system that is designed for client-server operation on WANs and enterprise-wide LANs. It helps users understand what information is available on various server volumes and provides natural language searching ability that includes relevance feedback and full, weighted and mixed Boolean queries and fielded searches. It also supports restricted access and logging for billing purposes. These logging features also provide system administrators with feedback and usage patterns for reporting and marketing purposes. The system also supports the indexing of documents in original formats, including MS Word and QuickTime; in addition to support for mail, netnews, and r-mail. A user-definable thesaurus can be used for synonym selection. WAIS Workstation offers all of the same features, except that it is designed for use on servers containing less than 100 Mbs for use within an enterprise or by smaller publishers.

In terms of BBS applications, many opportunities exist for independent software developers to design graphical user interfaces that will help users across many platforms—as clients—access and take advantage of accessible WAIS servers, including BBSs. As content publishers build online libraries, new opportunities will arise where BBS operators may, for instance, “subscribe” to and resell to their callers, access to any number of optional content and/or service packages, which could well include: newsfeeds, databases, abstracts, shopping catalogs, user-customized electronic newspapers, yellow-pages, or access to local library card-catalogs or the 22-million volume Library of Congress.

Sysops, who might possibly desire to specialize in a particular vertical market other than adult GIFs, Chat, or “local Macintosh support,” for instance, would be able to offer customers specialized access to medical digests, trade information, access to government records and regulations, legal libraries, or regional business data. An enterprising sysop could earn a real living serving as a clearinghouse for hard-to-find auto parts by offering various after-market

catalogs online. Another could do nicely by offering a database of QuickTime clips of actors or digitized recordings of musicians to talent agencies, or store gigabytes of royalty-based copyrighted images and sounds for use by commercial artists and advertising agencies.

One could offer almost endlessly specialized online, searchable support for the handicapped, small businesses, relief and non-profit organizations, native cultures, or educational institutions. By the year 2001, some sysops might even be able to afford to offer callers digitized versions of the over 10,000 classic books to be made available by the Gutenberg Project; or, for the engineering-oriented caller with that special crazed look in their eyes, access to the digitized works of J. Robert (Boomer) Oppenheimer.

For a brief description of current WAIS sources, e-mail Chris Christoff of Bond University in Australia via e-mail: **chrisc@bu.oz.au**. WAIS Inc., 1040 Noel Drive, Menlo Park, CA 94025; **(415) 327-WAIS** phone; **(415) 327-6513** fax; **frontdesk@wais.com** Internet.

CONNECTING A TBBS SYSTEM TO THE INTERNET PIMP - PERSONAL INTERNET MAIL PROCESSOR OPTION MODULE FOR TBBS

by Jack Rickard

It's a little hard to work both sides of the street. Generally, we are in the magazine business and leave software development to those who do it best. And writing about our own product is a bit awkward. But we're pretty persuaded that the worlds of bulletin boards and the worlds of global Internet mail are on a pretty imminent collision course. Demand for the actual utility of Internet connectivity is rising at a precocious rate, and those demanding it are showing a decided distaste for the command line interface available from most Internet providers. Ultimately the familiar BBS wants to be the face of the Internet and for many callers, the details of UNIX don't hold a lot of interest. They just want the files, the databases, and the mail.

The last is the most immediate concern. Now that the smell of universal e-mail is in the air, nobody wants to be left on an e-mail island. And so bulletin boards are scrambling to make the most basic Internet connection - domain name e-mail connectivity.

This is not a marriage that technically wants to work. The dialup way to connect to the Internet for mail uses a Unix to Unix Copy Program (UUCP) protocol developed a little earlier than XMODEM actually. And few DOS tools exist to perform this feat. Thomas Dell's WAFFLE BBS contains a Unix-to-Unix-Copy-In-Copy-Out (UUCICO) program that functionally operates as the "mailer" between DOS machines and most hosts. Chris Ambler developed something similar in his Fubar Systems Unix to Unix Copy Program (FSUUCP). And a commercial product titled UULINK is fairly widely available.

There have been a few small developers working on the project. Sparky Herring did an early port for PCBoard systems that Canada Remote was selling. Last year, Ed Hopper released a program titled uuPCB for PCBoard, and Roy Pereira of Merlin Systems more recently has been working on a fairly full featured program titled PCB-UUCP.

Tom Tcimpidis, somewhat famous as one of the first BBS operators to have his BBS seized by law enforcement in a very bizarre situation several years ago is reportedly developing a system for Wildcat! BBS systems. Locally here in Denver, Bill Thoen is working on something similar for Wildcat!.

The problem was that we at Boardwatch felt a pretty urgent need to have a fairly good connection for Internet mail on our system over a year ago. We run TBBS software on our own system, and neither eSoft nor any of the traditional third party developers for TBBS showed

a lot of enthusiasm for the project. So we had to write it ourselves - or abandon TBBS.

Actually there WAS a way to do Internet mail - using a Fidonet gateway. But an odd combination of events soured us on this approach rather quickly. The local gateway system was a single line BBS that apparently was born with a busy signal. And second, there was Henry R.

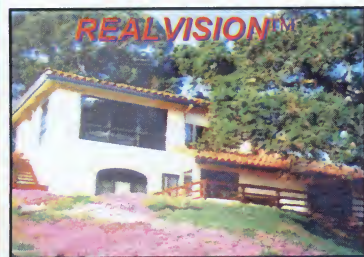
We don't know Henry very well. He's not a sysop. Doesn't subscribe to USA Today for his BBS, we're not too sure HOW he stumbled onto Boardwatch BBS but we were a little fascinated because he appears to be a BBS user. Now understand that we have about 16,000 actives in our user log, but we hadn't had a lot of experience with a "user". Most of our people are sysops, press people, modem manufacturers, or whatnot that are more or less players in the industry in one way or another. We're not sure, but we think Henry has

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a modem, and just wants to call our bulletin board. He did ask directly how to use Internet mail and we provided instructions to using the Fidonet gateway.

Mr. R apparently had a daughter at a University in another state, and he wanted to correspond with her by Internet mail. The Fidonet gateway service is technically accessed by sending an Internet message to UUCP at the net/node of your gateway. So from our system, Mr. R would address a message TO UUCP and the system would then ask for a net/node. He would enter 104/2 which is the local gateway. It would then ask for a subject. And finally, he had to learn that to actually address the internet message as the first line of the text of the message by entering TO: whoever@whatever.domain.com. It can't be the second line. It has to be the first line. There HAS to be a space between TO: and the address. The line has to START with the TO:.

The message is scanned out, sent to 104/2, and software at that point reads the address from the first line of the text, readdresses it to that address, and sends it to an Internet host.

The daughter replies. The reply comes in. Mr. R can read the reply. And the natural thing to do on a TBBS system would be to press R for REPLY and then draft the message. But no, you have to send a message TO UUCP, select a node number, and then enter the entire Internet address again - without error - on the first line of the message text. With each reply, you must enter the entire address all over again.

During some routine maintenance, I happened to catch Mr. R dutifully performing this oblation for our computer on the monitor one day. "Mr. Funk - we can FIX that or shut it DOWN - but if that damn computer isn't smart enough that our callers don't have to go through all THAT to send an e-mail message, I'm likely to impose a sudden voltage reduction on the ass end of it." Or words to that effect.

After a good bit of calling around, earst while assistant Mr. Funk reported that it appeared there was about to be a

power shortage, and if I was going to do the turning purple thing, could he go home for the day to wash his hair.

So I announced that I was going to actually write a program myself, in assembly language, which caused no end of mirth all over the office.

We decided to call it the Personal Internet Mail Processor. I had no interest in handling Usenet News, I just wanted the uncomplaining Mr. R. to be able to send personal mail without actually hand carrying the message across state lines himself. I'd been playing with it for three months before the acronym became evident. And so PIMP was born. As of January, Mr. R could simply press R to reply to his daughter. We put an ad in our own magazine as a bit of a joke, knowing there would be at least three other systems on the planet that would have to have it. Which at our price for a half page ad, was roughly how we determined the \$179 price. We sold 28 the first month.

PIMP is a full TBBS option module, the only one on the market we're aware of not actually developed and sold by eSoft, Inc. It's written in 100% assembly language, and stands slightly over 16KB in length. It loads as part of the BBS. It allows a TBBS system to import and export SMTP mail files received over a UUCP link from an Internet host. It does it more or less continually, as part of the normal BBS operation. You don't have to take anything "down", wait till later, or any of that. Mail usually goes out to the network within three minutes.

Initially PIMP used the UUCICO from FSUUCP or WAFFLE to actually dial the host and exchange mail. We ran the UUCICO from a separate machine we termed a "nanny" machine connected across a LAN to the TBBS system. Inbound mail was placed in an inbound directory, and every minute PIMP checked that directory for mail, tossed the mail into the TBBS message directory in a specified Internet e-mail board, and deleted the files. It also scanned that message board for any new messages and created the outbound files UUCICO needed to send to the host. The nanny machine checked for out-

bound mail every two minutes and if there was any, it dialed the host immediately. So mail would go out in less than three minutes in all cases. The Internet has improved dramatically in mail delivery and it is not uncommon to see messages delivered cross country in two or three minutes. We've actually observed callers in a gruesome form of cross country slow chat using the message system. We also implemented a semaphore file system to avoid contention between the two machines over the directory.

A couple of things came up immediately. The Internet has an unbounded propensity to send messages of all sorts to people who don't exist. We would get mail addressed to SYSADMIN, and ROOT, and POSTMASTER and all sorts of people that never existed. So we implemented an ALIAS file that PIMP would check to reroute mail to POSTMASTER, who doesn't exist, to SYSOP, who does. I found a month old message from Ward Christensen to Jack.Rickerd@boardwatch.com and it was strictly an accident that I found it at all. A conversation with Ward revealed that he just assumed that I didn't care to reply, was busy, didn't like him anymore, or something since I had never bothered to reply and he of course thought I had received it. So we implemented a function to check the userlog and send back a BOUNCE message to the sender if no match is found. In this way, if someone misaddresses a message, they will automatically get a reply from the system noting that no such user is registered at this site. No more e-mail disappearing into vapor trails.

The design goals were pretty simple. We wanted Internet mail to work as much like TBBS mail did locally as possible. And of course, we constantly tried to picture what Mr. R. would think about all this. One of the functions I have always liked about TBBS is the ability to attach files to a message. You can send an e-mail message and before saving it, one of the options is FILE. If you press F, it allows you to upload a file, of any size or type just as you would to a file directory. When the recipient receives the message, a line at the bottom of the message says ENCLOSURE: myfile.zip. If you press E for enclosure,

you can download the attached file. They are very private, and very intuitive to use.

In the Internet, files aren't generally passed as mail because many of the mail gateways have historically been 7-bit ports designed to pass ASCII or EBCDIC text. They will make rather a mess of an 8-bit data file. So the Internet has developed a common convention of passing binary files as ASCII data. Two common utilities, UUENCODE and UUDECODE allow this. UUENCODE converts binary data into ASCII text. UUDECODE converts ASCII text back into binary data. So we added a function to take outbound messages containing non-text data file attachments, and automatically uuencode the data and attach it to the bottom of the text message. And if we received any text messages with UUENCODED text at the bottom, it automatically UUDECODS it and reconstitutes the data file presenting it as a file attachment. The result is that between two TBBS systems connected to the Internet, you can send a file attachment, and it looks the same on arrival at the other system as it does at the originating system. Only PIMP knows about all the UUENCODING and UUDECODING. We tested this function with Roy Pereira's PCB-UUCP, and we can do the same end-to-end file attachments with PCBoard 15.0.

Another thing that is common in the Internet is mailing lists. Mailing lists are actually just a list of e-mail addresses with an alias. JOES.LIST@BOARDWATCH.COM might actually be a list of 100 different e-mail addresses from all over the world. But any message sent to JOES.LIST@BOARDWATCH.COM will be resent or forwarded to EVERY ONE OF THOSE E-MAIL ADDRESSES. In this way, it forms something of a worldwide discussion group. Everyone on the list receives each of the messages, and if they reply, everyone else on the list sees the reply as well. We added the mailing list function to PIMP, and promptly started the PIMPLIST@BOARDWATCH.COM for discussions about the product.

Offline mail readers currently have a

TO field limit of 25 characters generally. Occasionally, Internet addresses can exceed this length. So we did cave and implement the wretched TO: line address on the first line if you need it. If you enter TO: and an Internet address on the first line of any message, that address overrides whatever is in the TBBS TO field. In this way, offline mail aficionados can still send Internet mail from their machine, to the TBBS system, and ultimately out to the Internet.

By the time you read this, we should have completed testing of PIMP Option Module version 2.0. This release will actually do away with the requirement for an external UUCICO. We have built the UUCPg protocol into PIMP itself, and if anyone enters an Internet message, PIMP spawns another task that seizes one of the BBS modem lines, dials OUT to the host, and does a mail session - without an external UUCICO, LAN, or nanny machine to do it. It also includes hooks to spawn a TDBS program on receipt of mail or on creation of mail. In this way, you can write your own TDBS application to do random sort and delete operations, or whatever, on inbound or outbound mail, and the application will be run by PIMP at the appropriate times.

Others are actually developing things to work with PIMP (third party developers to a third party developer?) Ben Cunningham (Ben.Cunningham% nashex @uunet.uu.net) has written a TDBS application titled Internet Address Book. This is a database containing public addresses (Clinton's White House address for example) that anybody can send mail to and private address books for each caller, where they can enter an individual's name, company and notes, and Internet address. Each record has a number and you can rather conveniently draft a message to number 32 and it fills in the address for you. Jon Larimore (jon@glib.org) was concerned about cost accounting. He developed a package he calls TRAFFICOP that simply calculates how many bytes of traffic each caller sends and receives, so at some future point they could be billed for it.

Development of PIMP continues. Usenet News Groups should be added

quite soon, and we plan to add a function similar to what is on the Internet as an FTP e-mail file server. Callers will be able to send e-mail to FILESERVER@BOARDWATCH.COM with the filename in the body of the message. PIMP will reply with an e-mail message and uuencoded attachment containing the requested file.

In this way, PIMP should provide the most seamless Internet e-mail integration possible for TBBS bulletin boards. And while we haven't actually discussed it with him, we're pretty confident Mr. R. approves.

We will also be hosting a private developers meeting at ONE BBSCON for everyone developing Internet mail utilities for BBS software of all types - a private evening meeting to discuss various items to ensure we can pass mail, file attachments, and so forth from one BBS package to another, and answer any questions anyone has about how to handle various Internet mail issues.

Personal Internet Mail Processor Option Module for TBBS, copyright 1993 by Jack Rickard, \$179. For more information, call Gary Funk at Boardwatch Magazine, 8500 West Bowles Ave., Suite 210, Littleton, CO 80123; (303)973-6038 voice; (303)973-3731 fax; (303)973-4222 BBS.

SCHOOLS ONLINE

SCHOOLS AND RESELLERS EXPAND BBS APPLICATIONS

by Bill Gram-Reefer

While the Provincial Ministries of Education across Canada grapple with how best to formally integrate computer technologies into their curricula and educational process, many Canadian school districts, and the computer resellers that serve them, are forging ahead with innovative solutions. One example is the increased use of bulletin board systems (BBS) that let students, faculty, and administrators exchange mail, download files, and join in electronic conferences to exchange ideas.

"Computers and technology are an integral tool for learning that cuts across all subjects and grade levels," explains Lance Macsymic, Director of Education for the Lanigan School District, 70 miles southeast of Saskatoon, SASK. "A BBS is a great tool for learning and teaching telecommunications." Using Spider Island Software's TeleFinder— Group Edition BBS software for the Macintosh, Lanigan's 1,100 students in six buildings communicate with their peers across town in special projects, while teachers hold an ongoing conference to record ideas, share resources, and exchange solutions for lesson plans.

Other schools in Saskatchewan, including Middle Lake, Regina, Spiritwood and North Battlefield have also gone online. Saskatchewan's Viscount district, with its BBS that offers community-wide access and an electronic mail network throughout the schools in the district, has been designated as a "school of the future" by the Province. Meanwhile, educators expand their knowledge of how to use computers by networking online, using the University of Waterloo's MacJanet networking software, or by logging onto the SASK Education BBS, and in joining membership

organizations such as Saskatchewan's Association of Computers in Education (SACE), which already holds yearly conferences.

In Ganges, BC, on the Salt Spring Island situated north of Victoria, the district's 1,600 students and faculty located in nine school buildings use a TeleFinder BBS for electronic mail and conferences. The conferences include discussions regarding the district's technology plan, a different message base tracks professional development events and opportunities for the educators, while another conference serves as a repository for ideas for the district's curriculum development. It doesn't take much to get a BBS going, either, observed Kevin Vine, vice principal of the Salt Spring Elementary School. The BBS supports two active lines with but a Macintosh Plus with just 2.5 Mb RAM and a 30-Mb hard drive. Connections are made via a GVC 2,400-bps modem and a 9,600-bps modem from Zoom.

In addition to the TeleFinder BBS, Tom McKeachie, a classroom teacher for the fifth through seventh grades at the Salt Spring School, has involved his students in a special project that features

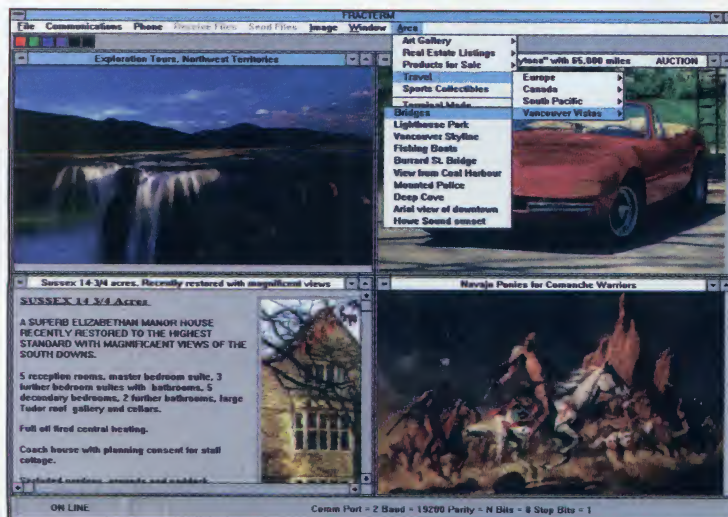
worldwide telecommunications, thanks to British Telecommunications (BT) and the London Times, which supply the databases and high technology. Throughout the spring semester, Salt Spring students, the only school in Canada to participate, excitedly followed the British Steel Challenge Race. By making modem connections to North London via BT Tymnet dialup telephone lines, the students were able to track the progress of a real-life yacht race featuring 10 identical 65-foot steel Bermuda cutters sailing around the world.

Each ship was equipped with satellite communications and global positioning equipment. Everyday, at 9:00 pm GMT, each yacht reported its position and uploaded human interest stories for the students, in addition to environmental observations including data on ocean currents, water temperature, and vertebrate sightings. Students, who were assigned to follow the progress of a particular ship during the race, logged onto the database in London and downloaded the updates as they enthusiastically plotted the position of their respective boats on full-sized navigation maps.

Another program that Salt Spring students participated in was an interactive space adventure, Planet X, where students from many different schools from around the globe played the roles of space explorers helping to colonize a new and mysterious planet. All of the participating schools were assigned a different part of Planet X to explore and cultivate, while trading clues and solutions with other schools as each solved problems peculiar to its assigned territory.

The Powell River School District (#47), also in British Columbia, has used TeleFinder and FirstClass, another Mac-based BBS developed by Toronto-based SoftArc. Bill Stewart, supervisor for educational technology, explained that the district's schools use FirstClass so that students can access the BBS from the 3 to 5 computers in each classroom. They use the BBS for chatting, writing projects, accessing materials on CD-ROMs, and for logging onto the library's database.

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Similar, exciting developments can be found in every Province across Canada. "There's no way to force-feed kids information anymore," related Richard Ralphs, director of educational sales for Byte Computers, Vancouver, BC's oldest Apple dealer. Ralphs referred to the conclusions of Year 2,000: A Framework for Learning, a document prepared by British Columbia's Ministry of Education, which defines the broad goals of implementing new information technologies into the Province's schools. "Students need the skills to source out information and communicate with others on their own. A BBS is a great way to train students to do that."

While Lanigan's Macsymic, for instance, noted that there were no problems installing TeleFinder and the modems without dealer support, teachers find meaningful ways to interact with computer resellers that serve their districts. In fact, teachers have challenged their resellers to find ways to add value with new levels of service and support for computer-literate customers.

"If you can't beat them, join them," are words to live by for Randy Kokesh, Education Manager for Memory Lane Computers located in Saskatoon, SASK. Memory Lane is an Authorized Apple Dealer and Education Support Dealer for all of Saskatchewan. This includes product sales, support, and service for all pre- and K-12 schools, and higher education in the Provincial colleges, and for the Saskatchewan Institute of Applied Science and Technology (SIAT). About 85 percent of the Province's educational market is Macintosh and Mac-related product sales.

In addition to direct sales and support, Memory Lane offers its customers access to a BBS operated by the dealership. Although designed as a sales tool dedicated to building new and repeat business, the BBS also provides a wide variety of services. While online, teachers and administrators can find new product announcements, pricing, and notification of special offerings and close-outs. Teachers and school administrators also take advantage of an active "flea market" classified section where one school district can find a buyer for its older equipment to make room for

new purchases from Memory Lane. Students, meanwhile, upload articles that are published in a weekly supplement distributed by a local, daily newspaper. Memory Lane also uses its BBS to advertise its sponsored special events, including its one- and three-day training camps that teach educators how to telecommunicate, or work with multimedia and other high-end Macintosh applications. Naturally, modem sales are brisk.

"We used to spend hours on the phone taking support calls," Kokesh recalled. But now, by accessing a trouble-shooting message base, teachers find quick answers from their peers, while the dealership's tech guru logs on for 15 minutes to respond to questions. Future plans for Memory Lane's BBS include obtaining a FidoNet address and setting up outlying districts as "points," so as to take advantage of online, networked K-12 conferences. He also plans to upload in-depth software reviews for customers to access and download.

Like Vancouver's Byte Computer, Memory Lane selected TeleFinder for its own BBS.

"None of the teachers showed much interest in our old BBS with its straight, text-based, command-line interface," noted Kokesh. "Users, even those familiar with DOS, felt lost," Kokesh continued. "A graphical user interface like TeleFinder, however, lends itself to people who have very little experience with computers and telecommunications. It's so easy, once they've learned to use the Mac's Finder, they can translate that expertise into productive work without getting lost like on most other networks." In Salt Spring, McKeachie's experience of watching the kids learn to download files from London provided an important lesson. "Downloading on the text-based system was difficult; the kids would get confused about which layer of the database they were in and would get lost easily," he explained. "But TeleFinder's just great, the kids always know how to find their way home, no problem."

Kokesh summed it up this way, "Ease of use is the key!" By offering an easy to use graphical-based communications

system, computer stores and educators have been able to make telecommunications easier for clients and students. That ease of use turns into productive learning.

ATTENTION EDUCATORS

The focus of this column is to report on BBS and network applications at work in schools from K-12 through graduate-level universities. Help educators and students get wired! Let us know how your educational institution is putting BBS technology and networks into action. Please let us know about specific, innovative applications you use, or your school's involvement in corporately-sponsored programs. I'll report on the most interesting resources, issues and programs you send to: SCHOOLS ONLINE c/o 2069 Highland Drive, Concord, CA 94520.

Bill Gram-Reefer, based in Concord, CA, is president of WORLDVIEW, specializing in connectivity and communications. E-mail Bill at: **wk05156@worldlink.com**

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MACINTOSH BBS NEWS

NOVA-LINE: 40-LINE MAC-BASED BBS

by Bill Gram-Reefer

Go big or stay home! A 40-line Mac-based BBS using ResNova's NovaLink Professional 3.0 has emerged from June beta tests and is available now for public callers from around the nation via its 22 toll-free 800-access telephone lines. In addition, the Nova-Line Information Exchange offers 18 local access lines. Based in Okemos (East Lansing), MI, Nova-Line becomes probably the largest Macintosh-based graphical-user-interfaced information exchange in the world.

Nova-Line's goals are to offer member-based associations, organizations, small businesses, and individuals access to

information and resources only available in the past to large corporations that could afford such services. Initially, Nova-Line will contain information for Michigan's business users, the business community, and for business people traveling to Michigan. Additionally, the main service is to provide a cost effective way for Michigan-based businesses to reach statewide, local, and national audiences.

Formed by a partnership between the law firm of Abood & Doyle, and the Dynamic Training Corporation, Nova-Line was originally seen as a way for each service company to better meet the needs of their respective small business clients, with interactive advice from legal counsel, accountants, marketers, and human resource professionals. Additional services these companies can offer their clients include job placement and counseling, organizational networking, membership polling, online business briefs, state and local job bid information, investment

counseling, travel services, and small business forums. James Maceri, president of Nova-Line believes the availability of these services puts small businesses on a level playing field with larger corporations.

Separate and private forum areas are being designed for businesses, organizations, professional and other associations that have between two or more locations and memberships between 50 and 25,000 people. Using Nova-Line, members can interact privately with the organizations in special forum areas, as well as take advantage of the main menu and features offered to the general public.

Within a year, Nova-Line plans to expand its information base to include the Midwest and other regions. Because NovaLink Professional is extendable to allow multiple servers in locations across the country, the business plan calls for Nova-Line to issue licensing agreements to put satellite locations in various states around the country to link small businesses and organizations via computer using Nova-Line's own information network, InfoLink, the new incarnation of ResNova's NovaNet. Once connected to a "supervisor" node, any licensed site can exchange appropriate private electronic e-mail and public messages or files that have been sent to an InfoLink address. These messages and files can travel to destinations around the world via built-in intelligent routing, the company claims. This capability, coupled with planned Internet gateways makes Nova-Line a potentially powerful and affordable connectivity tool.

In Beta since May 3, the system was scheduled to open to the public in June. Upon registration to Nova-Line via local-access lines, users will be able to download all of the software needed to begin communicating with the service. Additionally, a starter kit will be available in many computer stores in Michigan. These kits will include a user guide, keyword shortcuts, complimentary online time and the Nova-Line user disks containing the customized NovaLink user program and settings. All purchases and billings incurred from use of Nova-Line will be directly in-



voiced to a user's Visa or Mastercard.

Costs for individual memberships to Nova-Line include a one-time set-up fee of \$4.95, a monthly charge of \$4.95, and a per-minute rate of 5 cents for local-line access and 16 cents per minute for 800 not so toll-free access. Before the summer is through, the service plans to offer Nova-Chat for users that only want to chat. This feature will give users the choice of the regular service at the rates above, OR, a special chat package for a **\$15** set-up fee and a **\$15** per-month charge for unlimited chat time between off-peak hours, 6 p.m. to 6 a.m.

Group rates for organizations are also available depending upon the size of the group and the specific services each requires including private areas for conferences, file transfers, and real-time secured chat. Potential benefits to organizations include increased marketing communications to members, clients, and donors; automatic collection of dues, cost-savings by providing on-line organizational newsletters, the ability to poll members on critical issues, and by distinguishing the organization, for better or worse, as one using leading-edge technology.

Ongoing developments include services to handicapped users. Nova-Line is currently searching for a chain or several independent grocers to set up an online grocery service. Nova-Line couriers will deliver the groceries to users for a small fee. The group is also working with high schools to offer e-mail, parent-teacher conferences, and access for faculty, administration, and students.

By using NovaLink Professional's GUI, in addition to other graphic technology including RIPSCRIP, a front-end graphics protocol for DOS users, Nova-Line promises point-and-click ease of use for all of its users, regardless of computer platform. Many services will be available on Nova-Line, including: Membership Registry, Michigan Pick List, a fee-based service that provides profiles of most businesses in Michigan; organization newsletters, legislative alerts to keep users and organizations up to date on debates concerning their interests, automatic polling, USA Today



Decisionline, educational seminars, electronic mail, courier and travel services, classified ads, Grolier's Encyclopedia, a collection of commonly used business forms, a job bank, a bid list, on-line access to lawyers, accountants, marketers and financial consultants in a forum format; entertainment listings including sporting events, concerts, movies, and related services including the ability to buy tickets online via TicketMaster.

In mid April, a spokesperson for Nova-Line indicated that a national distributor had already signed on with Nova-Line so callers could reach them through the service. Another California-based organization with 35,000 members reportedly has signed on as well. With an 800 number, callers don't need to know the hard disk is in Michigan. "The response we're getting from places in California, even Florida, is phenomenal," noted Maceri. "The key to this is ease of use," Maceri continued. "We're not going after the normal online users, but new users. A straight text-based, command-line user interface would make access just too complicated. ResNova's product gave us the opportunity to provide a point-and-click, user-friendly interface to all of our users."

Len Anderson, CEO of ResNova Software, the developers of NovaLink believes Nova-Line "is the first serious application of NovaLink as we've designed it. It pushes the Mac to the max, and is clearly the largest publicly acces-

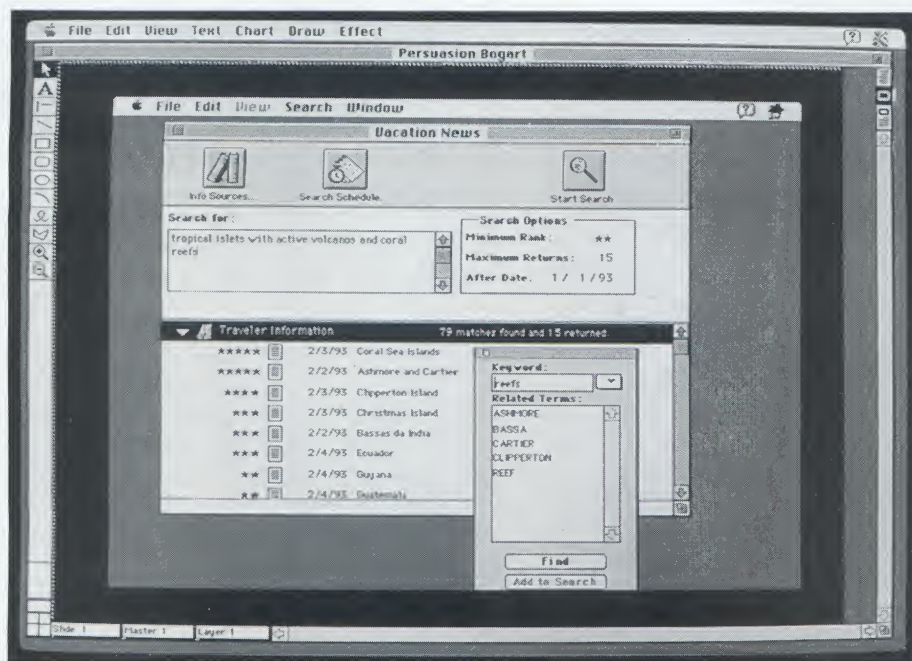
sible installation of our product. ResNova will be closely involved. The significance of Nova-Line," he continued, "has to do with it being a local board branching out to other regions rather than a national board like CompuServe."

A source familiar with the project claimed that running on one Quadra 950, the system could expand to 60 lines via third-party multi-port serial-port NUBUS cards. Sources estimate that it will even be possible to daisy chain at least 3 Quadras running EtherTalk and still share all of the resources needed to run the system from one site using multiple Quadras. This is just a guess, but with content royalty payments, the NovaLink software with all of the bells and whistles including TCP/IP, a Quadra 950 loaded for bear, 40 high-speed modems, Hurdler cards, Second Wave external NuBus expanders, telco hookups and long-distance setup fees, you're talking **\$40,000** upfront, easy. I'll also bet there is a very interesting proposal concerning electronic democracy on John Engler's desk; he being the Governor of Michigan. Nova-Line Information Exchange, P.O. Box 616, Okemos, MI 48805-0616; **(517) 336-6821** or **(800) 860-NOVA** voice.

TEXT SEARCH & RETRIEVAL FROM APPLE

Tucked away in the very back of Apple's March CeBIT announcements for its new Quadra-based servers was a shy press release for AppleSearch, Apple's client/server-based search and retrieval software available this summer. No big deal, right? Wrong! Did you ever wonder why there was never a version update for On Location? Read on.

AppleSearch is a new software tool that lets users access information on a server by providing full text search and retrieval. Users can search for information on any number of user-definable topics, or let AppleSearch act as an agent in performing those same searches periodically at designated intervals. Supporting Boolean query language and fully-customizable proximity searches of key words, AppleSearch ranks documents in order of relevance to the search



criteria. XTND file format translators extract plain text from various document types so users can view the text regardless of the document's native format. Indexes can be generated as well, for documents in shared folders, or on CDs.

Using a newspaper metaphor, the AppleSearch Client software provides electronic reporters and customized newspapers as an intuitive way to retrieve information. The AppleSearch reporter created by the user "finds" the stories it was sent to look for on the selected server volumes. It then delivers a list of all of the stories it found ranked by relevance to the initial search criteria. Then users can choose to view the text of the document or view the full document in its original format. AppleSearch can also display the selected "stories" in a "newspaper" created automatically, and even deliver it to a specific location on a user's hard disk. These reporters can be saved for future or workgroup use in a networked environment. If you've seen Apple Librarian Steve Cisler's demo of a program called Rosebud, you've seen AppleSearch. Citizen Kane, newspapers, reporters, AppleSearch; get it? The Server software performs the searches it receives from the reporters. Based on Personal Library Software's

search engine technology, the Server maintains indexes of all potential query terms within a document and their relationship to each other, and keeps a database of reporters on the system so they can be accessed by other users on a network. It can be scheduled to automatically update the index of files on any server on a periodic schedule. The software can index at apx. 10-15 megabytes per hour.

To set up an AppleSearch server you need an 68040-based Apple CPU (Workgroup Servers, Quadras, or a Centris), System 7, 8 Mb RAM (at least—AppleSearch is a true memory hog requiring a 4 Mb partition). The Client software requires any 4-Mb Macintosh computer running System 7. To set up a network with AppleSearch you need AppleShare 4.0 or the Macintosh file-sharing feature, AppleTalk software, and an AppleTalk network connection including LocalTalk, EtherTalk, TokenTalk, or AppleTalk Remote Access.

Cross-platform support is provided by Personal Library Software, which has announced it is developing AppleSearch-compatible products for major client and server platforms including UNIX and Windows.

A separate Newspaper Format Developer's Kit is a separate purchase. It contains utility routines and a developer's guide needed to write software that can read and write AppleSearch-compatible newspapers. An additional Client Developer's Kit is also available if any brave Macintosh BBS developers want to write custom user interfaces to work with the AppleSearch Server software. The API comes in C Library and AppleEvents versions. The kit includes several header and object files, developer documentation, a sample application with source code, and a suite of test tools. This kit also includes the Newspaper Format Developer's Kit described above.

Per Apple's usual, pricing for AppleSearch will not be released until the product ships in the summer. But since Apple seems pretty serious about getting this product into law offices, hospitals, school districts, colleges, corporations, and small businesses, it should be a reachable figure for most budgets. "This is not 'expert system technology.'" Pricing will follow Apple's desire to place this product in the mainstream," assured Susan Gladwin, product marketing manager for Apple's Enterprise Systems Division. There has even been reasonable speculation that the client software may even be freely licensable in the same fashion as ResNova, SoftArc, Spider Island, and XBR offer their respective user software. In fact, such a strategy would benefit Apple greatly by giving the blades away to create demand for the razors. Plus, in tandem with the announcement of its Workgroup Server line, Apple's new attempt to provide real hardware and solutions for the Fortune 500 makes for serious price-point consideration. In real-time, the true value will come from the third-party devs and VARs that will gussy up the source code and customized scripts for specific applications, like a BBS.

The Apple way to do the remote Client twostep with AppleSearch would be AppleTalk Remote Access. The ResNova way, of course, would be (I can hear Len screaming at Alex) "write an external" so callers could gateway to a BBS system's AppleTalk network and oper-

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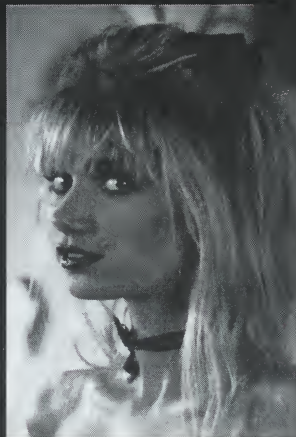
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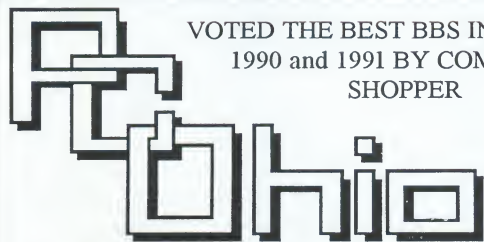
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ate the Client software remotely. One possible Spider Island way would be to gerry-rig something like the Take Your Order utility, where a user fills out the search criteria offline, uploads it to your BBS, where the information gets tossed into a bin that would create and execute a reporter run via AppleEvents. Users could call back and download their newspapers to read with their morning coffee. The FirstClass way might involve employment of a reporter form online to schedule a search. A CD publisher, like Grolier or Voyager, might index the documents using the Server software, press the disk and include the Client software on the disk for searches.

It really all depends on Apple's pricing for the software and developer kits. If the price is right you can bet that any serious developer is going to take a look at AppleSearch to divine workable solutions for a variety of markets. One obvious BBS application would be the equivalent of offering an executive news service (like you know who's) where, for a fee, sysops could offer callers a selection of most asked-for reporters or even fully customized ongoing searches of USA Today's Decisionline or satellite-fed news feeds from organizations like Utah-based Mainstream. Other potential content-rich partners include Dow Jones News Service, McGraw-Hill, and important workgroup applications like Lotus' Notes.

On the downside, AppleSearch is not Z39.50 compliant which makes it a parallel (but shipping) development to a more widely accepted but constantly evolving protocol that is the foundation for similar applications including wide area information searching (WAIS). Nor will the first versions support TCP/IP connectivity, or so we're told. And, finally, we wonder why Apple stopped at just text. Can we expect graphic or sound searchability before the end of the century? You can order AppleSearch through Apple's catalog. Wanna-be developers can get licensing information from Apple's EDS Licensing Department in Cupertino (408) 974-2320, or via AppleLink: ESD.LICENSE.

MAC BBS OF THE MONTH

We found two boards of interest re-

cently. The first is Heart of the North (HOTN), operated by John Darrow and Clarence Christian. Located in Northwestern Michigan, and serving Dickinson County out of Iron Mountain near the Wisconsin border, HOTN is a BBS that proves there's not much to do in the winter up yonder, so go putz with your computer if you're not of age. One of the first NovaLink boards we've seen running version 3.0, you'll want to download NovaTerm version 3.03 to get the full affect of the sound and graphics.

This board shows a lot of potential, running two Supra 14.4 modems on a Mac Classic II with 10-Mb RAM. It offers 185-Mbs of hard drive space and 2 NEC CD-ROM drives that provide access to GigaRom 3.0 for Mac callers and Night Owl (version 7) for DOS users. Over 11,000 DOS and 13,000 Mac files are available for users. There is a \$25 annual registration fee to defray costs of system maintenance and improvements.

HOTN takes full advantage of ResNova's BBS host software with graphical icons that help the user navigate through the system when using the NovaTerm user software and the board's special configuration file. Interestingly, this version of NovaLink Professional also lets the sysop choose to provide an un-configured look to the system that shows nested folders much like a FirstClass system. Being the first NovaLink BBS we've looked at, we were generally pleased with the performance and layout, once we got our (admittedly) obscure modem to work with the Config file. Although the plain vanilla modem would connect easily when used in a non-configured mode, it had problems responding to NovaTerm when using HOTN's configuration file.

Supporting both Mac and DOS users is a tricky business, and HOTN has taken a fair shot at it with a variety of files and conference areas. The Mac section offers conferences on the usual suspects, HyperCard, Graphics, Apple Rumors, propaganda from Apple, etc. DOS discussions also seemed lively. Cool implementations of sounds are used throughout to announce logon, completion of file transfer, and other events.

The Hard Disk Cafe is by far the most intriguing area to wander through. Here, you'll find conference sections on topics such as: Hints on Games, Cinema, Books, Sports, Music, What's Up, and World Events. The Interactive area was not fully operational when we called in mid-April, but promises a voting booth for online polling of members, a floating trivia contest open to all comers, a game room, dates in history, and a NovaNet (InfoLink) area for future networking capability with other ResNova systems.

Unfortunately, the Cinema section mainly contained very personal reviews of current flicks by would be Roger Eberts. I recommend that one way sysops could begin to jazz up these kinds of areas is to poll or start a thread where callers could list their top ten best-ever movies, rather than beat Indecent Proposal to death over and over. The Book section, too, could use such a discussion starter. And don't expect the New York Times Review of Books. It's Northwestern Michigan, folks. Actually, what I saw were charming notes from high-school students complaining about their junior and senior reading assignments for English class. Typically, the kids think *To Kill A Mockingbird*, a Pulitzer prize winning novel, is a bore. And, to see that *A Separate Peace*, is still required reading for Michigan's 12th graders was an eyebrow raiser, too. From the tone, I was surprised there wasn't a thread on *Catcher in the Rye*.

Overall, there are lots of GIFs and assorted pabulum for kids of all ages. In fact, I was interested to see just how popular Kathy Ireland can be where the sun don't shine for months at a time. But like I said, there's nothing else to do in the winter than play with your machine. Just wait until summer when sweaty-palmed, late-night tradewars action kicks in. Heart of the North; (906)774-3260 bbs.

After having just to much fun with a GUI BBS, I took the challenge of calling The Mountain Air BBS. Not to be confused with The Mountain Air BBS of Roanoke, VA, Paul White's board based in Cedar Glen, CA, runs Hermes 2.1 software under 6.5 system software on

a Mac SE with 4 Mbs and 100+60 megs of hard drive space. An HST Dual from USR runs the show. Open 24 hours since 1990, Mountain Air features free and immediate access with no download ratios. Plans call for a FidoNet node by the time you read this. Mountain Air also supports both Mac and DOS users via this (can't help but say it) hard to use command-line interface. O.K. I'm a wimp, I admit it.

You'll find a reasonable selection of files for DOS, MAC, Windows, even Amiga. Online games include Merchant, Hangman, and Safecracker. The not interesting voting booth lets callers admit to a variety of tastes and skills by noting what kind of musical instrument you play, or what you like to put on your French fries. Who cares? Pretty lame, actually. Why not ask people better questions like: "What part of Saddam Hussein's body would you cut off first? That'd get them going, wouldn't it? The Mountain Air BBS (909) 336-6080 bbs.

ATTENTION MAC SYSOPS

Off with his head! If you have a Macintosh-based BBS-even if it's hard to use and frequented by easily bored teenagers who can't spell—let us know who you are and what you think you're doing that makes your board special. To make things easy for everyone, mail a diskette containing your user program with a preset account, time allotment (1-hr for editorial deadbeats like me should be plenty) and password to the address below so I can log on and take a look around your system. Also include a text-file that describes your board and any interesting places on it you think are special. I'll try to visit as many boards as possible and write about the most interesting ones I can find. MAC BBS, 2069 Highland Drive, Concord, CA 94520.

Bill Gram-Reefer, based in Concord, CA, is president of WORLDVIEW, specializing in connectivity and communications. Bill has been writing about Macintosh computers since 1984. E-mail Bill at: wk05156@worldlink.com

DIRECT DIAL

THIS MONTH: ST. LOUIS MISSOURI

This month in our feature list, we list 322 bulletin boards in St. Louis. Since 1985 St. Louis has been a pretty good town for bulletin boards. This is the city that saw the birth of the FidoNet nodelist and was the home of that list for several years.

While Beth Brooks has been running a bbs for only about 6 months, she has been keeping tabs on the boards there going on four years now. To the many BBS callers, she is known as Fire Escape, and maintains Fire Escape's St. Louis BBS Directory, which you can always find on "Fire Escape's BBS Directory HQ" at (314)741-9505 using TriBBS software. She's Fire Escape, and the board is named after HER, not the other way around. The list is available as BBSmmmyy.ZIP where mmm is the month (i.e. jan) and yy is the year.

"Fire Escape" got her start in the BBS world when her husband brought home a modem and told her she might need it. And like most people that keep a BBS list, she does so because she became very disgusted with the lack of accuracy with the lists she found readily available. Each month, she personally calls each and every BBS listed to make sure it is up and running and devotes 4-7 hours daily, ten days per month to the task. Fire Escape is a very unusual lady - a devout Christian homemaker with a mohawk haircut and a penchant for dialing bulletin boards with a vengeance. As a result, St. Louis has one of the most accurate and detailed bulletin board lists in the world.

While we found a nice mix of BBS software in St. Louis, we were a little surprised to find that 133 (41%) of the systems run WWIV. This may explain the number of requests we are getting to cover WWIV. Number two is Wildcat! with 19 systems. St. Louis is overwhelmingly a WWIV town. The St. Louis metropolitan statistical area sports a popu-

lation of some 2,444,099 indicating a density of one BBS per each 7590.37 humanoids.

THIS MONTH AGAIN: MAINE BBS DIRECTORY

Maine is a land of few words, and apparently even fewer electronic bulletin boards. But Mark Stoffan of Gorham, Maine took us a bit to task for not covering the state of Maine in our BBS listings. He also sent us a pretty good list of bulletin boards to prove it could be done. Scott Bodeen operates the Street Corner BBS for the benefit of the residents of Bath Maine at (207)442-0997 using Spitfire BBS software. Street Corner is a member of FidoNet at 1:326/208 and Mr. Bodeen is the keeper of the numbers up in Maine. Since we've never covered an entire state on a single page before, we couldn't resist the temptation.

Actually, the entire state has a population of but 1,227,928 with about two thirds of the population living in rural areas scattered across some 31,000 square miles. But with 57 BBSs listed, that is still some 21,542 Mainer's per BBS. Just not much to say I guess - ayuh. Scott R. Bodeen, PO Box 962, Bath, ME 04530





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List of 322 Electronic Bulletin Boards

Courtesy Beth Brooks Fire Escape's BBS Directory HQ
(314) - 741 - 9505

BBS : 322

POPULATION : 2,444,099

POPULATION Per BBS : 7590

BBS	PHONE	SYSOP	BPS	SOFTWARE
1st and Goal BBS	272-8853	D.V. Ous	2400	Telegard
4 Play ADULT BBS	481-4821	Nite Writer	2400	
4 Star BBS	225-8821	Mike	2400	PCBoard
A Momentary Lapse Of Reason	739-4344	Dave Gilmour	2400	WWIV
Absolute Value	895-2616	Art Hebbeler	14400	
Abyss, The [C:\BBS> DIR]	434-2620	Crimson Wizard	14400	PCBoard
Access Denied: MAC BBS	846-5565	Skip	14400	Hermes
Access Imaging	664-8220	?	14400	
ACME Acres BBS	351-5227	Buster Bunny	14400	WWIV
Adventurer's Guild, The	892-6467	William	2400	Telegard
Aerovista	638-5204	Apollo/Crystal	9600	WWIV
Affinity ADULT BBS	771-1860	Aqualung	14400	DLX
After Thought	423-6312	Shade Tree	2400	WWIV
Alien's	349-5179	Alien	2400	C-64
Amazon, The	846-8758	Audiophile	14400	WWIV
American Liberator, The	343-4759	?	2400	WWIV
Amiga Only	428-4737	Mike Kraml	14400	Opus
An XTC	773-3248	Dean Ingley	14400	Spitfire
Applejacks	781-0143	Majicman	2400	
Arena, The	845-6849	Jake Blues	14400	VBBS
Armageddon	391-9161	Doc	14400	WWIV
Asgardian Realm, The	291-6762	Lancer	14400	WWIV
Asylum, The	846-8412	Blade	14400	VBBS
Auto-Reverse	921-0937	Dr Tone	2400	WWIV
Aviary, The	544-2569	Birdman	2400	WWIV
Banana Republic [C:\>DIR]	282-3337	Dr. Spine	9600	WWIV
Barb's Lookout Window	894-0919	Barb C.	2400	TAG
Big Mac Attack II	776-6711	R. Chiu	2400	Hermes
Bingo Hall, The	846-4031	Bob #1	14400	WWIV
Black Triangle, The	453-0662	Tracker	14400	WWIV
Blue BBS	434-7661	Emerson	14400	WWIV
Blue Lagoon, The	441-1119	Giddemyer	2400	WWIV
Bobber Board, The	441-0842	Bobber	14400	Telegard
BS Box	434-3470	PC Guru	9600	WWIV
Buckskin	776-2482	Dennis	14400	Telegard
Cafe Chaos	773-3106	Captain Chaos	14400	WWIV
Callahan's Crosstime Saloon	939-4113	Prince Kheldar	9600	WWIV
Castle Roogna, The	427-0669	Dor	14400	WWIV
Cat Box, The	965-0477	Jerry K.	14400	WWIV
CD-Source BBS, The	869-4421	C. Timmerberg	14400	
Changewinds BBS	469-2114	Stormie	2400	WWIV
ChatLink ADULT BBS	452-3182	Grizzley	2400	DLX
Cheswick's International BBS	965-1385	Chelsea C.	14400	Wildcat
Cindex Support BBS	837-5422	Furniss	14400	RA
Classified Board BBS, The	849-9068	Jim Hill	2400	RA
Cliff of Insanity	949-2581	Nobody/Katar	2400	WWIV
Coffee Shop, The	861-1867	Bob Coffey	14400	PCBoard
CompuCom Systems	578-9900	Thunder	9600	
CompUSA BBS	579-3072	David Bach	14400	Wildcat
Computer Addict BBS	285-5935	Ron	14400	Wildcat
Computer Assistance Network	298-8564	Martin Walker	14400	PCBoard
Computer Drafting/Design	644-9098	Rich Grace	2400	Wildcat
Computer Information Access	878-2910	Deep Thought	2400	WWIV
Computers Plus	942-3726	Chris Johnson	14400	Wildcat
Concrete Jungle, The	469-0426	Tartus	2400	WWIV
Corrosion of Conformity	394-1952	?	14400	WWIV
Crypt, The	973-9612	Tom Cat	14400	VBBS

TOP SOFTWARE TITLES

WWIV = 133 WILDCAT = 19

TELEGARD = 19 VBBS = 16

PC BOARD = 11 TBBS = 8

MODEM SPEEDS

1200 = 5 2400 = 134

9600 = 44 14400 = 139




BBS	PHONE	SYSOP	BPS	SOFTWARE
CSB Electro Mall Adult BBS	429-7580	Mike Duncan	2400	Major BBS
CUGSL	837-5757	Bruce Darrough	2400	WWIV
CyberSpace BBS	391-4017	Matrix	2400	WWIV
Dangerous Kitchen, The	727-3511	Hizrone	14400	WWIV
Dark Realm, The	447-8071	Darkshadow	2400	WWIV
Darkside, The	272-8617	Hardbody	2400	WWIV
Data Bytes User's Grp (DBUG)	821-0638	?	2400	TBBS
Datastorm Tech. Support BBS	875-0523	Chambers	9600	TBBS
Dawna's Zoo	921-1820	Dawna	2400	Michael's BBS
Death Star	878-7909	Lord Vader	14400	RoboBoard
Death's Lair (24 Hr Wkends)	432-8031	Iranian Mobstr	2400	WWIV
Deep Space Nine	481-0256	Cipher	9600	WWIV
Defcon Five BBS	278-3603	Fishbone?	9600	WWIV
Deja Vu	894-9271	ParaPsykotic	2400	C-64
Department Store	427-3514	Janitor, The	2400	TAG
Design 2 Art	926-3367	Design Team	14400	Wildcat
Desktop III	228-3832	?	2400	TBBS
Destructo's Domain	965-5258	Vindicator	2400	RoboBoard
Dew Drop Inn, The	282-2322	Music Man	2400	Telegard
Digital Future, The	532-9711	Digital Person	14400	VBBS
Digital's Electronic Store	234-1998	?	9600	
Director's Chair, The	638-5314	The Director	2400	WWIV
Ditto BBS	327-7702	Larry Crabtree	2400	Telegard
Dog Pound Too, The	878-8816	Sly Old Dog	14400	WWIV
Don's Domain	530-0553	Don	14400	WWIV
Donut Hole, The	947-6326	The Droid	14400	
Dragon's Flight BBS	631-0770	Shadowhand	14400	WWIV
Dragon's Nest, The	423-3949	Andy Edwards	9600	TriBBS
Dragon's Pit, The	773-6859	Dragon	2400	WWIV
Dream Theater, The	481-6561	Dream Master	2400	WWIV
Eagle's Nest	544-3226	Bald Eagle	2400	WWIV
Edge of Reality	647-4084	BThing/Magelln	14400	WWIV
Edge of the Universe, The	537-0884	Tikon/Magellan	14400	WWIV
Electric Lamp, The	928-7029	Electrician	2400	WWIV
EMC/80	843-0001	Jim Harre	9600	Opus
End of the Rainbow	921-8940	Nite Rider	14400	WWIV
Entropy	926-0889	Reanimator	2400	WWIV
Epson News Line	961-4594	Jerry Queen	14400	PCBoard
Epson News Line	961-2242	Jerry Queen	14400	PCBoard
Escape From Reality	776-4458	Data Master	2400	WWIV
Eternal Darkness	894-7539	Shadow Lord	2400	Telegard
Exidious	343-4573	Nemicis	14400	
Experimental BBS, The	287-4926	Nameless Bard	2400	WWIV
Fail Safe	861-1797	Alex Stangl	14400	WWIV
Farside, The	921-4269	Lefty	1200	C-64
FBI	278-8411	Nitro	14400	
Fellowship, The	644-5777	Tolkien/LadySF	14400	WWIV
Fight Palace, The	388-1454	Mister	2400	VBBS
File Cabinet II, The	653-6671	King TJ	14400	VBBS
Fire Escape's BBS Direct. HQ	741-9505	Fire Escape	9600	TriBBS

BBS	PHONE	SYSOP	BPS	SOFTWARE
Flash	275-2040	Dick Pederson	14400	FoReM
Flash, The	878-6599	Camera Bug	9600	Searchlight
Flight Control	521-8290	Dave Hart	9600	Opus
Forbidden Tower, The	522-3127	Rook	2400	WWIV
Freedom Station	677-8284	Bob Kleist	2400	TAG
Fritz' Place	822-5493	Fritz	2400	WWIV
Frosty's BBS	281-8457	Hot Rod	2400	
Funny Farm, The	353-3944	Sir Sparhawk	2400	WWIV
Future, The	921-6867	Rick Eben	2400	C-64
GateKeeper, The	770-0596	Blade #1	9600	WWIV
GateWay Amiga BBS (New #)	645-0226	Keneth Brill	14400	Excelsior
Gateway City	647-3290	Shoe	2400	FoReM
Gateway News Network II	231-5175	Scott/Spencer	2400	
Gateway Quick Connect	861-2105	B Dickherber	14400	WWIV
Gateway/2 OS/2	554-9313	Ron Gines	14400	Maximus
Gathering, The	839-2978	Chris Byrd	14400	Renegade
Ghostwheel, The	427-4119	Jenneman	9600	FIDO
Giggle's Tickle Trap BBS	544-7301	Giggles :)	2400	WWIV
Glass Menagerie, The	423-5787	Topgun	1200	C-64
GrapeVINE BBS, The	481-7600	?	2400	Wildcat
Great Void, The	878-8824	The Empath	2400	WWIV
Ground Zero	938-9143	The Master Grp	2400	WWIV
Harris Stowe College	340-3540	Les	2400	TBBS
Hartz Foundation, The	281-4362	Nick Hartz	14400	
Hawk's Nest BBS	789-4014	Hawk	14400	RoboBoard
Hellfire Club, The	241-2931	Sebastian Shaw	2400	WWIV
Hellhole, The	821-2732	Nero	14400	Hermes
Hide Away, The (also TLGD)	625-3640	Raven	2400	RoboBoard
Ho's House	892-5486	Ho	14400	Telegard
Home Alone BBS, The	638-5132	Scheron G.	14400	WWIV
Hospital, The	256-7135	Dr. Feelgood	14400	
Hotflash New User Register	245-2601	John Williams	2400	Oracomm
House of Cards BBS	933-2756	Ace High	14400	Wildcat
House of the Rising Sun	895-0686	V Flash	14400	WWIV
Ice House, The	541-9088	Scottie	14400	WWIV
IN-Med	968-9140	Adam Summers	14400	RA
InfoShare Plus	731-3266	Pete Urbanski	14400	Wildcat
Ink Well, The	394-1519	Angel	2400	Telegard
Insider, The	731-2443	Dale666	9600	VBBS
Invest Quest	644-6747	D. Richardson	14400	PCBoard
J.B. Mixer's The	278-4955	The Opester	2400	Renegade
Java Shoppe, The	256-8920	Bob Schmedake	14400	Opus
Jeremy's World BBS	429-4448	Jeremy	2400	WWIV
Judy's Believe It Or Not BBS	947-6641	Judy Holzweg	2400	GT Power
Junior's BBS (PCjr User Grp)	227-0087	John Maki	9600	Searchlight
Junk Drawer, The	434-4034	Marlin	2400	Michael's BBS
Ken's Survivalist	821-2815	Ken	14400	TBBS
Kevin's Place	739-0571	Kevin C.	14400	WWIV
KingDragon World BBS	664-5418	KingDragon	2400	WWIV
Knight's Armor BBS	296-3218	Knight	2400	
L00ney T00nes BBS	949-2687	Elmer Fudd	14400	WWIV
Lab, The	225-1693	Mandrake	2400	Maximus
Lancer BBS, The (24hr Wkend)	458-1222	Legion	9600	WWIV
Land of Evesnehl, The	842-4178	Keeper	2400	WWIV
Land of Oz/Gateway C/Nome K.	388-2540	Ozz	14400	WWIV
Land of the Midnight Sun	961-0857	Black Wizard	2400	WWIV
Last Bastion of Thought	469-0806	Panama Joe	14400	WWIV
Last Homely House, The	394-1306	Frodo	2400	
Late Night and Mid-Day BBS	296-7221	Danny Kelley	2400	WWIV
Laughing Buddha, The	772-7372	Golem	9600	WWIV
Lifesupport BBS	381-9561	Medic	14400	Spitfire
Longships	595-4489	Falcon/Redtail	9600	WWIV
Looking Glass, The	727-7624	Ratchet Man	9600	WWIV
Loop, The	862-1261	Chris Quinn	9600	RBBS
Love Boat, The	481-5846	?	1200	A-64
M&M Factory, The	861-1820	Snorkel	14400	WWIV
MAC Paradise	846-8982	Mac Master	14400	Hermes
Mailbox, The	776-8352	Chuck Hejkal	1200	C-64
MARKetplace BBS, The	521-7453	Mark Abbacchi	14400	Wildcat
Martin's Nest, The	961-0541	Ed Martin	9600	Maximus
Maximum Overdrive	469-0867	Nightwing	9600	WWIV

BBS	PHONE	SYSOP	BPS	SOFTWARE
Maze, The	428-7732	Jammin	2400	WWIV
MDC-RCC <SIG 1>	521-8197	Bruce Darrough	2400	FIDO
Meaning of Life, The	965-6027	Dungeon Master	9600	Telegard
Meramec Valley Software BBS	629-6383	The Wolf	2400	WWIV
Messianic Jewish BBS	227-6885	Harvey Smith	9600	Opus
Mid-West Nest, The	935-1853	Bubble	14400	Hermes
Mike's Resort	348-5520	Mike	2400	WWIV
Millennium, The	281-8481	Steve Jones	14400	Wildcat
Mo. Amiga Dispensary	381-7504	Carl	14400	Excelsior
Mo. School for the Blind BBS	776-8128	The Mule	9600	
Monopoly Board	861-2512	Gameguy	14400	Spitfire
MorningStar	394-7719	Stu Schankman	14400	RoboBoard
Most Wanted BBS	256-3852	Public Enemy	9600	WWIV
Mr. Wizard's Castle	256-7466	Mr. Wizard	2400	WWIV
Mysterious Land, The	447-8763	Awesome	2400	WWIV
Natural Disaster	441-8020	Overkill	2400	WWIV
Neon Dream BBS, The	895-1223	The Dreamer	14400	TriBBS
NeverLand BBS	579-9369	Peter Pan	14400	Wildcat
Next Level, The	447-6522	?	2400	
Night Lands	878-6031	Night Owl	9600	VBBS
Night Owl	942-4758	Johnson	14400	Wildcat
Nightstalker's Den	335-0530	Night Stalker	2400	VBBS
Noah's Arcade	343-8606	Girbaud	2400	WWIV
Nudist Camp, The	942-9907	Floyd	14400	WWIV
Offworld	580-0164	Joey Jay	14400	DLX
Olde Towne BBS	921-0724	Mike T.	14400	Renegade
One Net	664-1285	John Baltzer	9600	
Online with Hayes	874-2937	?	14400	TBBS
OnWorld America	878-0509	Jerry Jay	14400	WWIV
Optometry Online	553-6068	Dave Davidson	14400	RA
Orca's Ocean	225-1696	Orca	2400	WWIV
Origin's Talk	821-1078	Walt Stumper	14400	RBBS
Orion BBS	278-5357	?	2400	Renegade
Outerlimits, The (Tradewars)	429-1527	?	2400	Telegard
Ovid's Christian BBS	521-4621	Ovid B.	14400	GT Power
Partyline	845-7134	Short Circuit	14400	TBBS
Pawn Shop, The	843-7414	FuZZ HeAD	14400	VBBS
PC Innovators BBS, The	939-6404	Rob Volz	14400	Wildcat
PCJ Information Exchange	965-4759	Steve Hegger	14400	Wildcat
Penalty Box, The	532-9565	AfterBurner	14400	VBBS
Pentagon, The	522-9965	Cable	14400	WWIV
Pinball Arcade, The	481-7101	James Pruitt	2400	Telegard
Pinnacle Club, The	773-7337	?	2400	
Pirate's Nest, The	544-8811	Dale	2400	Telegard
Pitbull, The	272-7331	Mark Richardsn	14400	TriBBS
Pointless Forest, The	428-5232	Oblio	9600	WWIV
Power House BBS, The	327-5034	Mike Stephens	9600	TriBBS
Prime Time	296-5306	Fred Mueller	14400	Telegard
Princes of the Universe	487-7093	The Visionary	2400	WWIV
Professor's Lab, The	645-7143	Prof. Xavier	14400	WWIV
PuppetLand BBS	487-3098	Caelum	14400	WWIV
QuadStar BBS	721-3586	Stu Schankman	14400	RoboBoard
QwikCom	928-7262	Bill Clark	14400	Opus
Radiant Expressions BBS	453-0823	?	14400	Renegade
Radical's Retreat, The	352-7619	The Radical	14400	WWIV
Raggedy Ann and Andy's MBS	946-2434	Raggedy Ann	14400	WWIV
Rail News Midwest	867-3413	Weeb	9600	Telegard
Rap City/Altered Portal, The	963-7960	Dr. Dre	2400	WWIV
Rarely Called BBS, The	282-0017	Mr Plates	14400	Telegard
RCET's FrEdMail	894-5592	Barb Clements	9600	
RCET-NET	894-5623	Steve Geiss	2400	TBBS
Realm of Possibilities, The	773-9062	PM	2400	WWIV
Realm of Reality	822-2637	Quarth	2400	WWIV
Realm of the Unknown	894-8356	Eagle	2400	Telegard
Reverse Technology BBS	441-9375	Michael #1	14400	WWIV
Rick's Cafe BBS	939-2172	Rick	14400	WWIV
RIGHT Side of..World (New #)	645-1284	Sinfonian Dude	2400	WWIV
Road Kill Cafe, The	644-2995	?	1200	C-64
Rockwood South HS Ramdrive	861-2360	Anorandex	2400	WWIV
Rolla Link in Exile, The	838-1092	Mike Livorse	2400	Michael's BBS
Roman Empire, The	772-1138	Caligula	9600	Spitfire

BBS	PHONE	SYSOP	BPS	SOFTWARE
Romulans-R-U's BBS	642-8371	Aushta Kimliir	2400	
Ronda's Riverboat BBS	821-5146	Ronda	14400	WWIV
Sand Castle, The	845-6994	The Sandman	14400	WWIV
Science	576-6488	Dean of Scienc	2400	WWIV
SEMPCo	531-5311	Sim	14400	CNET
SexWorld ADULT BBS	423-9667	Smutmaster	2400	WWIV
Shedhouse, The	742-6901	Ron (?)	2400	A-64
Shortest Straw, The	921-5790	Ace	2400	WWIV
Sign of the Times	984-8519	Seventh Son!!!	2400	WWIV
Skip's Doghouse	272-7547	Skip	14400	Wildcat
Sky Net	352-8584	Terminator	14400	WWIV
SLACC Stack	367-8941	Noel Moss	2400	Major BBS
Small Business Administ. BBS	859-4636	Patricia Saiki	2400	
Smurphland BBS	741-1984	Thom Dismuke	14400	
Sneakers II BBS	532-1474	Bishop	14400	Hermes
Soap Suds BBS	771-7954	Fauna	2400	Telegard
Soft-Logik Publishing	894-0057	Gumby	14400	WWIV
Sole Survivor, The	846-2702	Shadowfax	14400	WWIV
Source, The	741-2589	Nuke	2400	Telegard
Southside, The	353-1096	Space Cowboy	9600	WWIV
Sparx's Hangout	921-7052	Sparx	2400	WWIV
Spif Land BBS	355-7721	Master of Spif	2400	WWIV
SSM Abilities Resources Term	781-6397	Rick Barbre	2400	WWIV
St. Louis (Travel) Online	625-3874	Rick Brown	14400	PCBoard
St. Louis CAT II, The	351-7150	?	14400	PCBoard
St. Louis Christian	947-0895	Mike Ashburn	9600	
St. Louis County Library	569-1032	?	2400	
St. Louis Heath User's Group	434-1338	Bill Coalson	2400	FIDO
St. Louis Shareware	638-3041	Shadow Ninja	2400	WWIV
St. Louis Users Group BBS	878-7614	?	14400	Wildcat
Strange Brew BBS	394-4809	Mr. Plow	2400	WWIV
Stratosphere, The	752-6665	Stratos	2400	WWIV
Stretching the Limit	878-1845	Capt. USA	14400	WWIV
Stryder Communications	838-7020	David S.	2400	
Studs MBS	837-2840	The Nomad	14400	WWIV
SW St. Louis Searchlight	781-4286	Bowe	14400	Searchlight
System IV	771-7271	John Williams	2400	Oracomm
Tandy Man's II	428-6036	Tandy Man	9600	VBBS
Tardis, The	664-8149	Omega	14400	VBBS
Tarkus: The BBS	731-2650	Rael	14400	WWIV
TeleComputing Center, The	479-3750	Twinkie..Squid	14400	WWIV
Temple of Deviants, The	839-5990	Tuck	14400	WWIV
Threshold Archive/The Morgue	434-6440	Drake	2400	WWIV
Thunderworld	281-3326	Dawg	9600	VBBS
Thursday ONLY (up ONLY Thur)	822-5358	Scott Goltl	2400	
Time Traveler, The (New #)	522-8045	Dr. Who	2400	WWIV
Tin Roof, The	849-0918	Chris Wilkins	14400	WWIV
Toad Hall	965-0662	Toad	14400	WWIV
Toast House	994-0312	Toastmaster	14400	Wildcat
Too Tall's Plc.(Phone# +444)	997-7060	Too Tall	9600	VBBS
Tropical Desert	326-0206	?	2400	WWIV
True Blue	434-4236	Fred McClaren	14400	PCBoard
Turbo Virtuality	256-8798	Qwilleran	2400	
Twilight ADULT BBS	832-6119	John Butler	9600	Spitfire
U.S. Global Seismology	358-2663	?	2400	
Ultra Mac	965-4634	G. McManama	14400	
UltraLink, The	821-4957	G. McManama	14400	FIDO
Uno Multiline Chat	230-0050	Pheonix	2400	DLX
Utopia Planitia	353-0197	Neil Clinch	9600	CNET
Vanishing Point, The	464-0123	The Protector	2400	WWIV
Vision Dimension, The	764-4366	Elaine P.	14400	Wildcat
Vitiate Systems BBS [300+]	822-1464	The Shadow	14400	Renegade
Volunteer Network, The	625-6269	Jim Roe	2400	
Wallstreet Raiders, The	831-7469	Charles Brady	9600	Maximus
Washington Connection, The	390-2233	Mhz	2400	WWIV
Wastewater Treatment Info.	544-1936	Jon Newman	2400	PCBoard
WaterDeep BBS	677-8817	Drizzt/Dr. Dre	14400	WWIV
Welcome Mat, The	364-5021	?	2400	VBBS
White Dragon's Cave	846-5616	White Dragon	2400	WWIV
Woman's Place, A	741-2231	Kim	2400	Opus
WurmBorn Rangers Info. Serv.	524-6332	A. Underdown	14400	Major BBS
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Acorn BBS	Tony Cremonese	Freeport	TBBS	865-3004
Addiction BBS	Michael Scribner	West Buxton	PCBoard	727-5989
Amiga Underground	Aubrey Alexander	Wiscasset	CNet	882-7787
Backwoodz BBS	Adam Beatham	Kennebunk	Spitfire	985-6264
Bangor ROS BBS	Jim Smith	Bangor	TPB	942-7803
Bits N' Bytes BBS	Anne Arnold	Winslow	Wildcat	873-1937
Boondocks	Stephen Lutz	Caribou	Skyline	498-8875
Celestat BBS	Noel Stooky	B. Hill Falls	Major BBS	374-2303
Cobra BBS	John Murray	Brunswick	RA	725-0899
Country Lane	Harold Murphy	Kennebunk	Spitfire	499-2999
Demons Porta	Craig Howitt	Windham	Spitfire	892-3983
Dream Link	Brian Caouette	Lewiston	CNet	786-2926
Dyer's Radio Shack	Leo Dyer	Mexico		369-9473
Eagle's Haven	Ken Bouchard	Bucksport	SuperBBS	469-6732
ESCAPE! BBS	Kevin Green	Arundel	Spitfire	283-4939
EMTC Elec Tech	Dick Cynewski	Bangor	WC	941-4687
Final Frontier, The	Matthew Randall	Augusta	Spitfire	622-0588
Fox Island BBS	Bob Watts	Vinalhaven Is.	WC	863-2013
GameLynk Enter.	Joe Charette	Saco	Spitfire	284-9860
Greene Machine BBS	Marcel Gauthier	Sabattus	Searchlight	375-4078
Harbour Lights BBS	Rick Lembree	Kennebunkport	Dialogue Pro	967-3719
Kobayashi Alternative	Paul Leclair	Greene	CNA	946-5665
L/A Blues	Jon Meier	Lewiston	RBBS	777-3465
L/A PC-Forum Annex	Bob Leduc	Lewiston	Searchlight	777-1317
Light House BBS, The	Deron Treadwell	Lyman	Spitfire	499-2696
Lobster Bouy	Mark Goodwin	Bangor	TRI	941-0805
Maine PC Connection	Dave Parks	Westbrook	PCBoard	854-3928
Maine St. Planning Off.	Michael Montagna	Augusta	Spitfire	289-4017
Mainware	Jim Wilson	Ellsworth	XBBS	667-4729
MFS Computing BBS	Mario F. Simard	Jackman	Michtron	668-3631
MicroLab BBS	Michael Picher	Augusta	Spitfire	623-1022
Midnight Special BBS	Elizabeth Bachman	Kittery	RA	439-7919
Montreal Express	Wayne Price	York Beach	RA	363-6584
Moveable Image	Doug Roberts	Gray	RBBS	657-4423
MSLS BBS	George Fergusson	N Whitefield	Spitfire	549-3213
NEED(c)	Jim Breece	Orono	WC	581-1867
New Frontier BBS	Timothy Bass	Saco	Spitfire	284-0176
New Frontier BBS II	Kerry Hanson	E. Waterboro	Spitfire	247-3553
NEXUS	Beverly Locke	Ellsworth	Searchlight	667-2922
Night Owl BBS	Joe Charette	Saco	Spitfire	284-0850
Nucleus, The	Andy Hodgkins	Wiscasset	TRI	882-4152
PaPa Willy's Work Shop	Will Bastille	Augusta	Spitfire	445-4588
Plain Brown Paper Wrapper	Tim Charlton	Sanford	Spitfire	324-1902
R.A.C.U.G.	Paul Cole	Rockland	WC	596-7030
Radioactive Realm	Danny Bernard	Mexico	Renegade	369-9473
SBA-BBS	Tim Smith	Brunswick	RA	721-0038
School Talk SAD#9	Paul Gooch	Farmington	WC	645-3250
Shipbuilder BBS	George Trask	Bath	GBBS	443-8263
SMTc BBS	David Pratt	S. Portland	PCB	799-3547
Street Corner BBS	Scott R. Bodeen	Bath	Spitfire	442-0997
Techno-Zone BBS	Kevin Coughlin	Brunswick	RA	729-4349
Trojan Horse BBS	Chris Sullivan	Bath	RA	442-7932
T.V. Implosion BBS	John Fisher	Pemaquid	Spitfire	677-3471
Twin Schooners	Robert Sommers	Wiscasset	GBBS	882-9779
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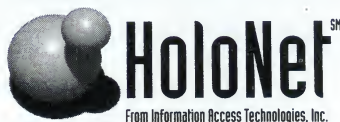
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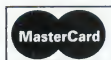
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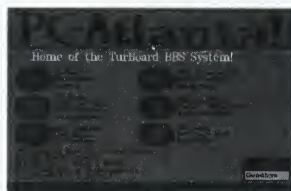


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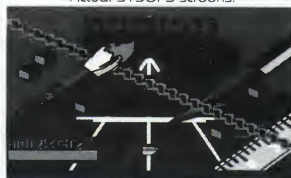
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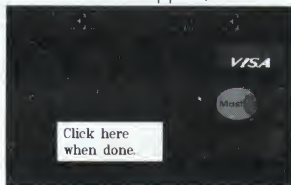
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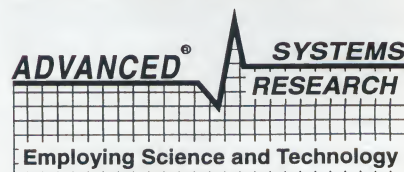
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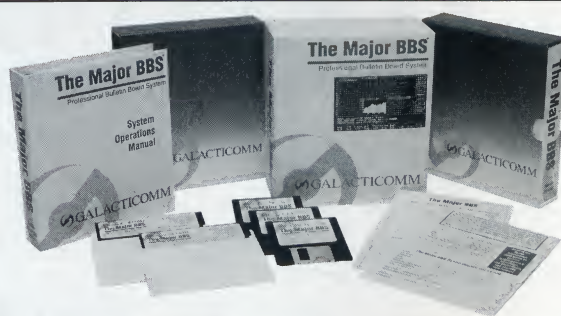
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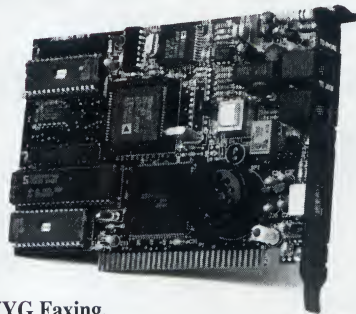


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Celerity	Brendan Woihiaye	(310)693-9405	DOS - Pascal/Assembler	(310)939-5539	409 North Clark St, Suite D, Orange, CA 92668
Darkstar	J. Thomas Hunter	(501)631-9131	Many features		2409 W Dogwood, Rogers, AR 72756
DCI	Nordevald Software	(813)961-0788	DOS		POB 280138, Tampa, FL 33682
DLX	Inner Loop Software	(818)893-7600	Multiline - 32 lines - excellent chat/social system.	(818)894-4150	17939 Chatsworth St. #192, Granada Hills, CA 91344
Falken	Info*Share	(703)803-8000	DOS/Multiline-16 lines-runs ext programs	(703)491-5823	PO Box 1501, Woodbridge, VA 22193
GAP	GAP Development Co.	(714)493-3819	DOS/LAN 99 Nodes - Fast ISAM Searches		24242 Porto Fino, Monarch Beach, CA 92629
Harmony BBS	Jasen Fici/Alex Bloom	(607)748-5276	Flexible software, many features		917 Main St, Vestal, NY 13850
Major BBS	Galactcomm, Inc.	(305)583-7808	DOS/Multiline - 255 lines-chat-multiuser games	(305)583-5990	4101 SW 47th Ave #101, Ft Lauderdale, FL 33314
Megahost	ASCII Computer Interprises	(209)836-2402	DOS/Single Line - Small, Easy to Run		231 Market Place # 353, San Ramon, CA 94583
OmegaComm	Larry Loiselle	(512)452-6350	Nice ANSI BBS, Easy to setup and use	(612)894-5580	Rt 2 Box 75-G, Manor, TX 78653
Opus-CBCS	Opus-CBCS Development	(412)366-5208	FidoNet compatible BBS - multi-node.	(412)364-4017	8024 Crest Road, Pittsburgh, PA 15237
PCBoard	Clark Development Company	(801)261-8976	DOS/LAN-99 Nodes-Popular BBS for shareware BBS	(801)261-1686	PO Box 571365, Murray, UT 84157
PowerBBS	Russel Frey	(516)822-7396	Runs under Windows 3.0-Up to 8 tel lines. Doors	(516)938-0506	35 Fox Ct., Hicksville, NY 11801
Powerboard BBS	Scott Brown / nuIQ Software	(914)833-1479	LAN and DESQview compatible up to 999 lines	(914)833-3479	415-A Richbell Road, Larchmont, NY 10538
QuickBBS	Steve Gabrilowitz	(407)380-1701	DOS/Single Line - Shareware clone of TBBS		POB 678255, Orlando, FL 32867
RBBS	Ken Goosens	(703)978-6360	DOS/LAN Multinode - Free - BASIC Source Avail	(703)978-4339	5020 Portsmouth Rd., Fairfax, VA 22032
Remote Access	Continental Software	352-25-1621	DOS/LAN 99 nodes - TBBS/QuickBBS clone - flex menus	352-25-1619	4 bd d'Avranches, Belair, Luxembourg, L-1160
Robo-Board	Seth Hamilton	(819)685-0957	EGA/VGA/ANSI support, Graphics online	(819)682-6670	PO Box 633, Aylmer, QB J9H 6L1
RyBBS	Gregory Ryan	(414)962-1097	Easy to setup and configure	(414)962-5967	PO Box 11134, Shorewood, WI 53211
Sapphire	Pinnacle Software	(514)345-8654	Easy Installation and Setup - Single Line Package	(514)345-9578	Box 714 Airport Road, Swanton, VT 05488
Searchlight	Searchlight Software	(516)689-2566	DOS/LAN - Multinode - Visual and easy to use	(516)751-2966	PO Box 640, StonyBrook, NY 11790
Spitfire	Mike Woltz	(515)225-8496	DOS Single Line		913 39th St., W.DesMoines, IA 50265
Synchronet	Digital Dynamics	(714)529-9547	Multiline up to 250 nodes, fully configurable	(714)529-6328	PO Box 501, Yorba Linda, CA 92686
TAG	Paul Williams	(313)582-6671	Support for TAG BBS Software		Dearborn, MI
TBBS	eSoft Inc.	(303)699-8222	DOS/Multiline - 64 lines per machine - good database	(303)699-6565	15200 E Girard Ave # 3000, Aurora, CO 80014
TriBBS	Mark Goodman	(207)941-0805	DOS Multi-Node - Fido capable - offline mail		366 14 St, Bangor, ME 04401
TurBoard	Software@Work	(404)395-6327	World's First NAPLPS BBS	(404)395-6525	PO Box 566491, Atlanta, GA 31156
VBBS	Roland de Graaf	(616)399-4818	1028 nodes, built in Fidonet support		4246 Elizabeth Ave, Holland, MI 49424
Wildcat!	Mustang Software	(805)395-0650	DOS/LAN/250 Nodes - Very good on LAN installations	(805)395-0223	PO Box 2264, Bakersfield, CA 93303
WWIV	WWIV Software Services	(210)631-5841	DOS/Single Line - C source available with registration		00 Box 720455, McAllen, TX 78504

APPLE/MACINTOSH

First Class SoftArc, Inc. (416)609-2250 ... Multiline Macintosh BBS Package (416)299-4723 ... 805 Middlefield Road, #102, Scarborough, ON M1V 2T9
Hermes Computer Classifieds (206)643-2874 ... MAC - Multiline BBS for Macintosh - Very good 12819 SE 38 St # 101, Bellevue, WA 98006
hi-BBS XBR Communications (514)489-0445 ... Multi-line, graphics, vt100 (514)489-1001 ... 5253 Decarie Blvd., # 350, Montreal, QB H3W 3C3
Mansion Software Design (515)279-6769 ... Macintosh BBS package (515)276-9650 ... PO Box 12016, Des Moines, IA 50312
Novalink Pro ResNova Software Inc. (714)379-9004 ... 24-Line Mac BBS Package - Graphics/VT-100 (714)379-9000 ... 5011 Argosy # 13, Huntington Bch, CA 92649
Proline pro-sol/Morgan Davis (619)670-5379 ... Apple II/GS - Unix lookalike BBS - Usenet News (619)670-0563 ... 10079 Nuerto Ln, Rancho San Diego, CA 92078
Second Sight Scott Watson, FreeSoft Co. (412)846-5312 ... Single Line BBS Software for Macintosh (prev Red Ryder) (412)846-2700 ... 105 McKinley Road, Beaver Falls, PA 15010
Tabby Michael E. Connick (908)988-0706 ... MAC - Fidonet Mail Interface for Macintosh PO Box 307, Bradley Beach, NJ 07720
Telefinder Spider Island Software (714)730-5785 ... Multiline Macintosh BBS - up to 20 lines (714)669-9260 ... 4790 Irvine Blvd. Ste. 105-347, Irvine, CA 92720

OS/2

Kitten System Enhancement Assoc. (804)442-5867 ... DOS, OS/2, Multi-line - also SEAmal Fidonet mailer (804)442-5865 ... PO Box 949, Nassawadox, VA 23413
Magnum BBS Chuck Gilmore (805)379-3450 ... OS/2/LAN-8 Lines per computer - looks like PCBoard (805)379-3210 ... 1285 Falling Star Ave., Thousand Oaks, CA 91362
Maximus-CBCS Scott Dudley (613)389-8315 ... FidoNet compatible BBS - multi-node 777 Downing Street, Kingston, ON K7M 5N3
Multi-Net Multi-Net Communications (503)883-8197 ... Multi-Line OS/2 BBS Package (503)883-8099 ... 15702 Black Bear Ct., Klamath Falls, OR 97601

UNIX

CocoNet Coconut Computing, Inc. (619)456-0815 ... Unix - Hires Graphics like Prodigy - term program (619)456-2002 ... 7946 Ivanhoe Ave Ste 303, La Jolla, CA 92037
Magpie Steve Manes (212)420-0527 ... DOS/UNIX Conferencing Software with unique threading .. (212)533-1692 ... 648 Broadway, Ste 300, New York, NY 10012
TEAMate MMB Development Corp. (310)318-5302 ... Unix/Multiline - VT100 ANSI Graphics (310)318-1322 ... 904 Manhattan Ave., Manhattan Beach, CA 90266
XChange Z/Max Computer Solutions (315)635-1947 ... Unix - Pull Down Menus/Pop-up Windows (315)635-1882 ... 8287 Loop Road, Baldwinsville, NY 13027
WAFFLE Darkside International (408)245-7726 ... DOS/UNIX - Provides UUCP function for DOS machines PO Box 4436, Mountain View, CA 94040

AMIGA

DLG Pro BBS/OS TelePro Technologies (403)347-3269 Multi-Line Fidonet #1:134/2004 (403)341-7826 7898A Gaetz Ave., Red Deer, Alberta Ca., T4P 3N4



HAYES CUTS OPTIMA 144 +144 FAX PRICE TO \$179 FOR SYSOPS

Just as we were going to press with the July issue, Hayes Microcomputer Products of Norcross Georgia released a May 24 announcement of dramatic price cuts of up to 48% on their modems, and particularly stunning decreases for qualifying bulletin board operators. This constitutes the most dramatic price cut in modems we've ever witnessed.

U.S. Robotics last month cut pricing across their entire Sportster line and this month on their WorldPort models. This is taking on all the aspects of a modem price war - with high quality, high speed iron taking a dive into sub \$200 waters.

Most notably, Hayes dropped the sysop price on their popular OPTIMA 144 +FAX144 to a record \$179 from \$299 (40% cut). The ULTRA 144 model got the biggest percentage cut decreasing to \$249 from the previous \$499 - a drop of a little over 50%. And the company has even offered their ISDN PC Adapter and ISDN System Adapter, each of which carry a list price of \$1199, at a sysop price of \$450 - down from \$650.

The OPTIMA 144 model particularly was already getting very high marks in the BBS community at the \$299 discount price Hayes offered to BBS operators. The modem has proven a solid performer with extremely few



operational quirks and offers good connections to a wide variety of caller modems.

While these price cuts signal a very competitive time ahead for modem manufacturers, the consumer market has heated up significantly this year for all personal computer products and modems in particular as more people go online. With high-speed modems suddenly and rather dramatically less expensive, record unit sales volume levels are almost unavoidable.

The other element of note with regards to the Hayes sysop program is that they have announced expansion of the program globally. Commerce Department export controls on high speed modems had hampered international availability of sysop modem discount programs in the past. There had been exten-

sive deliberations within the past few months as to whether to drop the restrictions entirely. Apparently the decision was favorable as Hayes is offering the program to BBS operators worldwide.

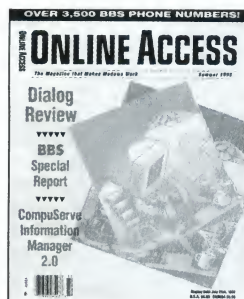
"We are always looking for ways in which to provide the sysop community with the best technology available, in both hardware and software products, at affordable prices," said Hayes President Dennis C. Hayes. "Smartcom for Windows, our newest communications package, allows sysops the ability to develop their own custom interfaces with its built-in powerful scripting capability."

And apparently they are finding ways. One of the most dramatic elements of the announcement was the notice that BBS operators could order modems with SAME DAY SHIPMENT on orders received by 3:00 PM EST. To a community accustomed to waiting up to 12 weeks on modem orders, this sounds too good to be true.

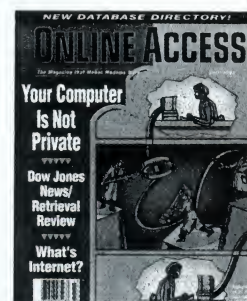
Additionally, Hayes announced a cooperative program for marketing their new Smartcom for Windows terminal program. For each copy of the program ordered by bulletin board users through their registered Hayes sysop at \$49, Hayes will rebate \$5 to the BBS operator.

BBS operators interested in the program can get more information from the Online With Hayes support system at (404)446-6336 or by calling Becky Smith at (404)840-9200. The program continues through September 30.





FIRST ISSUE



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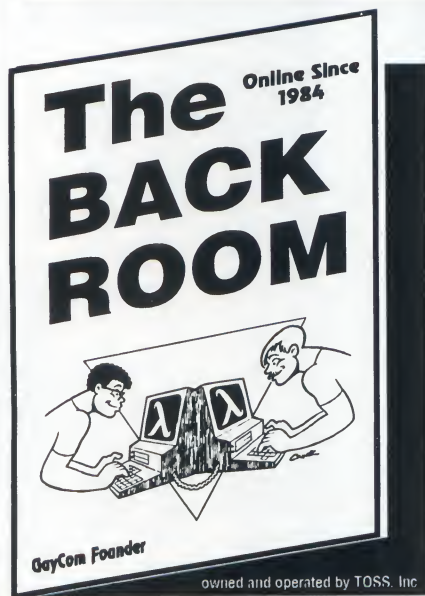
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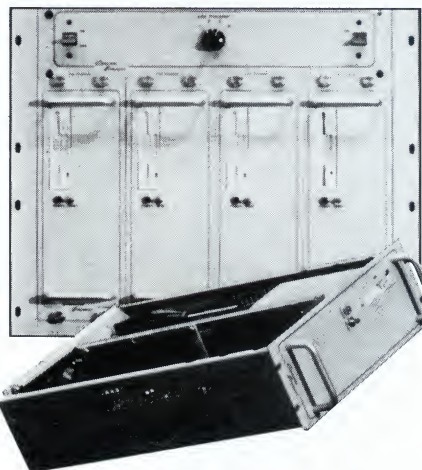
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BOARDWATCH

LIST OF BBS LIST KEEPERS

This listing comprises a list of those who compile and maintain lists of bulletin boards, either by topical category, or by some geographic area or definition - often by area code. The primary bulletin board system where the list can be downloaded electronically is also included.

BBS LIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
Republic of South Africa	Henk WOIsink	Catalyst BBS	(041)34-1122
BBS With Handicapped Focus	Bill McGarry	Handicap News BBS	(203)337-1607
Connecticut AC 203	Kevin Brook	Creative Edge BBS	(203)743-4044
Seattle AC 206/West Washington	Bob Dinse/Nanook	Eskimo North	(206)367-3837
Tacoma Washington AC 206	Richard Langsford	AmoCat BBS	(206)566-1155
Autocad Related BBS	Jason Osgood	SAUG BBS	(206)644-7115
Kitsap County Washington	Michael Schuyler	Quicksilver BBS	(206)780-2011
Maine AC 207	Scott R. Bodeen	Street Corners BBS	(207)442-0997
Astronomy/Space BBS	John Pickens	Starbase III BBS	(209)432-2487
Central California AC 209	Jack Porter/Madera UG	Zen Den Systems	(209)675-8436
Graphical User Interface BBS	David Shapiro	The Goopy (GUI) BBS	(212)876-5885
Southern California	Mike Hefferman	SOCAL Corner	(213)422-7942
96 List - 9600+bps BBS	Ken Sukimoto	Downtown BBS	(213)484-0260
Open Access UNIX Site List	Phil Eschallier	LGNP1 (login:BBS)	(215)348-9727
Pennsylvania AC 215/609/302	Ron Brandt	DSC/VOICENET	(215)443-9434
Cleveland Area 216	Eric Rickin	Wine Cellar	(216)382-2558
Conservation/Nature BBS List	D.Wendling/JS Christianso	Coin of the Realm	(301)585-6697
Ham/Amateur Radio BBS	Stan Staten	3WINKs BBS	(301)590-9629
Handicapped Issues BBS	Richard Barth	HEX BBS	(301)593-7357
Desktop Publishing BBS	Frank Atlee	Infinite Perspective	(301)924-0398
Medical Issues BBS	Edward Del Grosso	Black Bag	(302)731-1998
South Florida Area 305/407	Eric Thav	Silicon Beach BBS	(305)474-6512
California AC 310	Jim Walton	Illusions BBS	(310)804-3324
Detroit Area 313	Horst Mann	Tony's Corner	(313)754-1131
St. Louis AC 314	Beth Brooks	Fire Escape's Dir	(314)741-9505
ASP BBS Member List	Bob Ostrander	PBS-BBS	(317)856-2087
Engineering Related BBS	Arthur Petrzalka	Computer Plumber	(319)337-6723
Rhode Island Area 401	Mike Labbe	Eagle's Nest	(401)732-5292
Atlanta Area 404	Online Atlanta Society	OASIS	(404)627-2662
Atlanta Area 404	Rodney Aloia	INDEX System	(404)924-8472
Orlando Florida AC 407	Matt Drury	London BBS	(407)895-1335
Baltimore Area 410	Brad Blase	Network BBS	(410)247-3797
Pittsburgh AC 412	Chas Stokes	Zuul's Catacombs	(412)264-9787
National BBS List	DP McIntire/Beth Spotts	Ameriboard	(412)349-6862
Milwaukee Area 414	Jay Jadofsky	Priplanus	(414)442-0170
Arkansas Area 501	Bob Underdown	The Gaslight BBS	(501)444-8420
Louisville KY AC 502		Old Soldier's Home	(502)942-2848
Kentucky AC (502)	Dan Elder	National Data Exchg	(502)942-2848
Portland Oregon BBS	Lisa Gronke	DawGone Disgusted	(503)297-9145
New Orleans BBS List	Jeff Jones	Southern Star BBS	(504)885-5928

BBS LIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
Worcester MA AC (508)	Jim Metzler	Miwok Village BBS	(508)754-6512
San Francisco Area 408/415/510	Julie McGrew	Bay List BBS	(510)339-1045
Austin Area BBS List AC 512	Gordon L. Harlan	--ACE*BBS--	(512)258-9553
Selected BBS	Joseph Caplinger & Son	J&J's BBS	(513)236-1229
List of Gay/Lesbian BBS	Eric Blair	S-TEK BBS	(514)597-2409
AC 516 Free Shareware BBS	Harold Stein	Long Island Exchange	(516)385-7882
Area Code 517 - Mid-Michigan	Rick Rosinski/SAMM	Wolverine BBS	(517)695-9952
Business/Professional BBS	Dennis Hauser	Delight The Customer	(517)797-3740
Phoenix AC (602)	John Mendivil	Majestic Royalty BBS	(602)278-1651
Phoenix AC (602)	Sue Widemark	Cheese Whiz BBS	(602)279-0793
Wisconsin 608		JW-PC Dataflex.HST	(608)837-1923
New Jersey AC 609	Dave Schubert	The Casino PCBoard	(609)561-3377
New Jersey Area 201/609/908	Wayne R. Morton	Praedo BBS	(609)953-0769
Minnesota Twin Cities AC 612	Barry Watson	Abiogenetic BBS	(612)489-7983
San Diego, CA AC 619	Ron Dipold	ComputerEdge	(619)573-1675
San Diego AC 619	Joe Nicholson	General Alarm	(619)669-0385
Apple II BBS with Internet con	Morgan Davis	pro-sol	(619)670-5379
Virginia AC 703/804	Scott Dickinson	TOSOR BBS	(703)366-4620
OS/2 BBS Systems	Pete Norloff	OS2/Shareware BBS	(703)385-4325
Washington DC BBS List	Mike Focke	Interconnect	(703)425-2505
Geneology Related BBS	Richard A. Pence	NGS-CIG	(703)528-2612
Ontario Area 705	Alex Draper	Cottage Country BBS	(705)835-6192
Black Run/Oriented BBS	Arthur "Rambo" McGee	BDPA BAC BBS	(707)552-3314
Chicago	Paul Chartraw	The Hideaway BBS	(708)748-1911
Airline Pilot/JUMPSEAT BBSs	Rex Chadwell	ChicAAgo Hangar	(708)980-1613
Houston Area 713	David E. Wachenschwanz	Atomic Cafe BBS	(713)530-8875
Rochester NY AC 716	Tracy Logan	Logan's Run	(716)256-2659
National 800 Number BBS List	Michael Long	Hayes Online	(800)874-2937
CompuCom Modem BBS List	Thomas Weathers	Referral Market BBS	(803)297-4395
Macintosh BBS	Bill Taylor	Fort Mill Tabby	(803)548-0900
Ecology/Conservation BBS	Bob Chapman	EarthArt BBS	(803)552-4389
Wildcat! BBS	Jim Harrer	Wildcat! HQ	(805)395-0650
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Technical Support BBS List	Gary Barr	Digicom BBS	(812)479-1310
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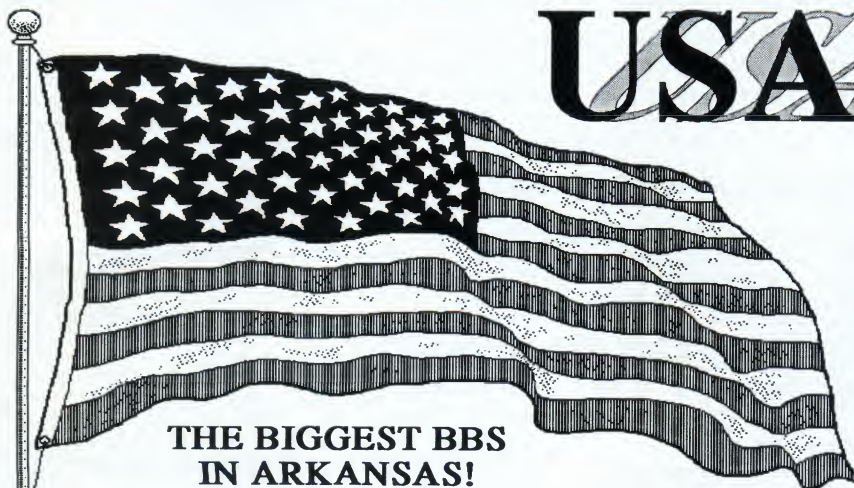
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ADA Information Clearinghouse	(703)614-0215	Information on ADA Programming Language/Military Specs	Department of Defense	Washington, D.C.
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American Cybernetics BBS	(602)968-1082	Multi-Edit Product Support BBS	American Cybernetics	Tempe, AZ
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Schedules	Assoc. of North American Radio Clubs	Scotts Valley, CA
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Beyond Eternity	(617)864-0712	General Topics - TBBS - Internet Mail	Boston Computer Society/Martin Hannigan	Boston, MA
Bird Info Network	(303)423-9775	Macintosh Topics - Firstclass BBS Software	J. Black/K. Taghadossi	Torrance, CA
Boardwatch Magazine Online Info	(310)371-3734	Home of EEEKI Bits - Weekly Electronic Trivia Magazine	Terry Rumer/Dave McClaugage	Arvada, CO
Book BBS	(510)849-2684	Breeding, Raising, Taming, Exotic Birds	Berkeley Macintosh Users Group	Littleton, CO
Book Stacks Unlimited	(303)973-4222	Support for Macintosh owners - files - conferences	Boardwatch Magazine	Willow Grove, PA
Borland Download BBS	(215)657-6130	Distribution Service for USA Today/Boardwatch/Newsbytes	Business & Computer Book Store	Cleveland, OH
Bothay Bay EIS	(216)694-5732	Information on 2000 Computer Books - 800 order number	Charles Stack	Scotts Valley, CA
Boundary Waters BBS	(408)439-9096	200,000 Book Titles Database - Online Ordering	Borland International/Mike Fitz-Enz	Portsmouth, NH
Bruce's Bar & Grill	(603)431-7229	Utilities, Macros, Programming Examples for Borland Products	Myles Bratter	Ely, MN
CAD/Engineering Service	(203)236-3761	20 GB of Files - Adult areas - BBS Lists	Gary Knopp/InfoNorth	West Hartford, CT
Canada Remote Systems	(303)758-1551	Canoe Trips/Resorts/Fishing/Wilderness in Minnesota	Bruce Lomasky	Denver, CO
Castle Tabby 107/412	(615)824-4938	Citations to 4 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Hendersonville, TN
CBBS/Chicago	(416)798-4713	Computer Aided Design File Distribution Network 1:116/32	Stan Bimson	Mississauga, Ontario
Celebration Station	(301)738-9060	23GB/400,000+ files, 3500 Conf's, USENET, IBM/Amiga/Mac	Neil Fleming/Jud Newell	Rockville, MD
Central Point Software	(908)988-0706	One of the oldest PC User's Groups - 5500 members	Capital PC Users Group/Roger Fajman	Bradley Beach, NJ
Channel 1	(312)545-8086	Home of TABBY Fidonet Interface Program for Apple Macintosh	Michael E. Connick	Chicago, IL
Chicago SysLink	(207)374-5161	First Electronic Bulletin Board - Since 2/16/78	Ward Christensen/Randy Suess	Blue Hill Falls, Maine
Class Computer Fields	(503)690-6650	Adventure Games, Chat, and Sigs - Children	Noel Stookey (Paul of Peter, Paul & Mary)	Beaverton, OR
Classified Connection BBS	(619)566-7347	PC Tools - Central Point Anti-virus support board	Central Point Software Inc.	Cambridge, MA
Cleveland Freenet	(719)520-5000	Special Interest Areas for Ferret/Pet Owners, TRS80/Aviation	Brian Miller/Tess Heder	Berwyn, IL
CommunityLink @ DCWAS	(703)765-0501	UNIX System offering Internet Mail	Randy Suess	Chicago, IL
Compact Audio Disk Exchange	(415)824-7603	Online System for Classified Advertisements	Steve Easall/Trader Newspaper	Indianapolis, IN
Computer Business Services	(714)396-0014	Giddy Girls - Nude GIF Images of the Girl Next Door	Bill Kennon	San Diego, CA
Computer Garden	(301)546-1508	Cleveland City Info/Public Library - Free Internet Mail Box	Case Western University/AT&T/Ohio Bell	Cleveland, OH
Computing Canada Online	(416)497-5263	News and Entertainment - 17 Lines Community Focus	Klaus Dimmler	Colorado Springs, CO
Corporate Data Exchange (CDX)	(609)683-4422	DC Tour Info. & Help, Online Publications, Treknet, Fidonet	Wayne Rutledge/Bob Burnett	Alexandria, VA
Crosstalk Communications BBS	(404)740-8428	Buy/Sell/Trade Compact Audio Disks Online	Nick Anis Jr.	San Francisco, CA
Cul-de-Sac Bar & Grill	(508)429-1784	Book/Publishing Consultant Nick Anis' BBS	Milford P. Webster	Salisbury, MD
CyberStore - a COCONET BBS	(604)526-3676	Treasure Hunting - Metal Detectors - Online Catalog	Computing Canada Newspaper	Willowdale, Ontario
DAK Online Resource Center	(818)715-7153	Adjunct to Excellent Canadian PC Newspaper	LaFountain Research Corp/7ad LaFountain	Princeton, NJ
Dark Side of the Moon	(408)245-7726	PR Newswire/ Business Wire. Logon: hello user.cdx	Digital Communications Associates	Roswell, GA
Data Core BBS	(310)842-6880	Product Support for Crosstalk for Windows/MK4/XVI	Pete White	Holliston, MA
		Multiline Service - Ham Radio - Humor - TDBS Applications	CyberStore Online Info. Systems Inc.	New Westminster, BC
		All lines to v.32bis/v.42/v.42bis. CyberTools for BBS'es	DAK Industries/Tom Krogh	Canoga Park, CA
		DAK Mail Order Catalog - Breakmakers - CD ROMS - Computers	Thomes E. Dell/Darkside Enterprises	Mountain View, CA
		Home of WAFFLE; Unix UUCP BBS Software for DOS and UNIX	Matthew Schoen/Delta Enterprises	Los Angeles, CA
		25 line Major BBS		

DataLink RBBS System	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton ,TX
Dawg Byte	(615)385-4268	ANSI Art Club 1:116/29	Kevin Snively	Nashville ,TN
Deep Cove BBS	(604)536-5885	16 line TBBS, 3500 Mbytes files for IBM, MAC, Amiga	Wayne Duval	White Rock ,BC
Denver Exchange, The 104/909	(303)623-4965	Denver's Most Diverse Gay/Lesbian Info Service	James Craig	Denver ,CO
Denver Free-Net	(303)270-4865	Free Community Online Service - Health Info	University of Colorado Health Science	Denver ,CO
DragonNet 386/451	(409)765-5459	Multiline MAJOR BBS with 4 GB - 64 lines Interactive Games	Robert Michael/Dragon Profit Systems	Galveston Island ,TX
EarthArt BBS	(803)552-4389	Wildlife/Conservation Art Gallery GIF Images	Ambassador Wildlife Gallery/Bob Chapman	North Charleston ,SC
East Bay X-Change 372/888	(803)556-7485	Home of XRS Offline Mail Reader	Mike Ratledge	McClennanville ,SC
Ed-Net	(604)732-8877	Vancouver School Board Multi-Line Educational Network	Barry Macdonald/Vancouver Board of Ed	Vancouver ,BC
Electric Ideas Clearinghouse	(206)586-6854	Energy Efficiency Efforts in Pacific Northwest-HydroElec	Bonneville Power Administration WSE	Olympia ,WA
Electronic Publishers BBS	(503)624-4966	News-Finance-Sports-Games-2GB File Library	Brian Cash	Portland ,OR
Electronic Zone, The	(412)349-8654	Specializing in Hypertext	William R. Forbes	Indiana ,PA
Energy Info Admin E-Publications	(202)586-8508	Variety of Petroleum/Coal/Electricity Energy Statistics	US Department of Energy	Washington ,D.C.
eSoft Product Support BBS	(303)699-8222	Home of The Bread Board System (TBBS) BBS Software	Phil Becker/eSoft Inc.	Aurora ,CO
Event Horizons	(503)697-5100	64 Line Digitized Graphics Image Library - Adult, GIF files	Jim Maxey	Lake Oswego ,OR
Exchange BBS, The	(713)521-2191	Largest BBS in US - 280 Lines -650,000 files - 35 Gigabytes	James Craig/John Fields	Houston ,TX
EXEC-PC	(414)789-4210	Largest Gay/Bi/Lesbian Multiline BBS in Houston	Bob and Tracey Mahoney	Elm Grove ,WI
Executive Network	(914)667-4567	Interlink Netmail National Host - Multiline PCBoard System	Andy Keeves	Mt. Vernon ,NY
Eye Contact BBS	(415)255-5972	22 line Oracom - Gay Issues - Popular Chat System	Bill Montgomery	Mill Valley ,CA
Falken Support BBS	(703)803-8000	Support for FALKEN software - 16 lines - doors - chat	Herb Rose	Woodbridge ,VA
Farwest BBS	(604)381-3934	Large Western Canada Galaticomm Info System	Ren L'Ecuver	Victoria ,BC
FAX/Satellite Services BBS	(619)224-3853	NOAA Weather Satellite Images - Russian/Japanese Sat Pics	Scotty Olson	San Diego ,CA
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service	Federal Communications Commission	Columbia ,MD
FEDLINK ALIX II	(202)707-4888	Info on Federal Libraries - Excerpts Library of Congress News	Federal Library Information Network	Washington ,D.C.
Fido Software BBS 1:125/111	(415)863-2739	The First Fido BBS and home of Fido BBS 12s	Tom Jennings	San Francisco ,CA
Fido Tech Stand	31-30-735900	Fidonet Technical Information for Holland	J.J. van der Maas	Utrecht ,Holland
FOG City BBS 125/10	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs	Bill Essex	San Francisco ,CA
Fred the Computer	(508)872-8461	Newspaper BBS. Wierdnet Newswire. List of MA Libraries	Middlesex News-Adam Gaffin	Framingham ,MA
FreeBoard BBS, The	(804)744-0797	Desktop Publishing File Distribution Network 1:264/212	Bill Hunter	Midlothian ,VA
FSBBS Prototype System	(805)543-8227	Home of FSUUCP and FSBBS - Unix Communications for DOS	Chris Ambler, Fubar Systems	San Luis Obispo ,CA
Fun Connection	(503)753-8431	Multiline Entertainment - 8 Lines Games/Chat/News	Vincent Reece	Corvallis ,OR
Galaticomm Demo System	(305)583-7808	Customer support for Major BBS	Galaticomm	
Garbage Dump, The	(505)294-5675	Online Chat Service - Adventure Games - National Chatlink	Dean Kerl/Datasafe	Albuquerque ,NM
Gateway Communications BBS	(714)863-7097	Novell Netware/TCP-IP Shareware Utilities	Carol De Jesus	Irvine ,CA
Gateway On-Line	(313)291-5571	Interactive Chat,MultiplayerGames,Usenet/Internet,E-mail	Jeff Breitrner/Bill Mullen	Rockwood ,MI
GDP Technologies	(303)673-9470	Outstanding IBM Shareware on a small system	Tom Getty's	Lafayette ,CO
General, The	(619)281-8616	Popular File Library - GIF Images	Marc Teitler	San Diego ,CA
GISnet BBS	(303)447-0927	Graphics Information Systems/Mapping topics	Bill Thoen	Boulder ,CO
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps	Community Educational Svcs. Foundation	Washington ,DC
GPO WINDO Online Service	(202)512-1387	Fed Information from EPA, DOE, State Department - others	Dick Dillman/Greenpeace	Norcross ,GA
Greenpeace Environet	(415)512-9108	Ecological and Peace Issues - Disarmament/Toxics/Wildlife	Hayes Microcomputer Products	Peoria ,IL
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra	Peoria County Board/Bradley University	Philadelphia ,PA
Heartland Free-net	(309)674-1100	Community Online Service - Free Internet E-Mail Boxes	Mark Miller	New Hartford ,CT
Hepnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish	Lee Winsor	Philadelphia ,PA
HI Info-Net BBS	(203)246-3747	MS Windows and OS/2 Files our specialty	Information Access Technologies, Inc.	Berkeley ,CA
HoloNet	(510)704-1058	National Access,INTERNET,USENET,CHAT,GIFS,FILES	Gene and Katie Hamilton	St. Michaels ,MD
Home Power Renewable Energy BBS	(707)822-8640	Photovoltaics/Micro-hydro/Generators - Home Power Magazine	Jim Howard	Kansas City ,MO
HouseNet BBS	(410)745-2037	Home Fixup/Repair/Renovation Tips, Advice, and Articles	Russell McOrmond	Ottawa ,Ontario ,
Howard's Notebook 1:280/25	(816)331-5868	Environmental, Peace, Justice since 1982 - 4 nodes	IBM National Support Center	Atlanta ,GA
Hysterics	(613)231-7144	Amiga File Distribution Network 1:163/109	Harry Newton Publications	New York ,NY
IBM National Support Center BBS	(404)835-5300	Telephone Sales Trade Magazine Online Service	Rodney Aloia	Lexington ,KY
Inbound/Outbound/Teleconnect	(212)989-4675	Excellent list of Atlanta BBS systems online	Daniel Diachun	Hasbrouch Heights ,NJ
Index Systems	(404)924-8414	Demo BBS for InfoHost BBS Software - Multiline - Database	A-Comm Electronics Inc.	Johnson City ,TN
Infinity World	(606)278-2002	Space Database - Online Store - Chat	Arthur Geffen	Dallas ,TX
InfoHost Demo BBS	(201)335-2253	LAN Related Files and Utilities 1:124/6101	Intel Corporation PCEO Division	Hillsborough ,OR
Infotlink for Upper East Tenn.	(615)434-2551	Support for Intel PC Products - Inboard 386/AboveBoard 286	Mike Sussell	New York ,NY
Inns of Court, The	(214)458-2620	46 Lines - 100 Directories - Full Usenet Feed - 8.2 GB	Don Shepherdson	Bellevue ,WA
Intel PCEO Support BBS	(503)645-6275	Online Investment/Stock Market Information/Tech Analysis	JDR Microdevices	San Jose ,CA
Invention Factory	(212)274-8110	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes	Alpha Systems Inc./Bill Griffin	Roswell ,GA
Investor's Online Data	(206)285-5359	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.	Keith P. Graham	Nyack ,NY
JDR Microdevices BBS	(408)559-0253	OPTIK, TEXT2COM, CBOOT, very good shareware utilities	Federal Reserve Bank of Minneapolis	Minneapolis ,MN
JOBS	(404)992-8937	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data	Jim and Karen Burt	Boulder ,CO
Keith Graham Shareware Support	(914)623-0039	400 MB Books, Writers Area - FRS 80 Support	Artisoft Inc.	Tucson ,AZ
KIMBERLY BBS	(612)340-2489	Support for LANtastic local area network	Tim Pozar	San Francisco ,CA
King's Market BBS 104/115	(303)665-6091	Home of UFGATE - Software to connect PCs to UUCP/Usenet	Bill Sorcinelli	Spokane ,WA
LANtastic BBS	(602)293-8065	Legal issues/Forms - Law BBS List		
Late Night Software 125/555	(415)695-0759			
LegalEase	(509)326-3238			

BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - JULY 1993

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
MAC-LINK	(514)486-8959	Macintosh Oriented Support BBS - 6 Lines - Informa/BIX	Mark Smith	Montreal, Quebec
Macolat Bulletin Board	(412)846-5312	Support for Second Sight BBS Software for Macintosh	Jeff Driggs/FreeSoft Company	Beaver Falls, PA
MacCircles	(303)526-2219	Mac System Software distributor, mail, sigs, files	Patricia O'Connor	Golden, CO
MacInternational	(803)798-3755	Largest MAC BBS on East Coast	Ralph Yount	Columbia, SC
Magpie BBS	(212)420-0527	Support/Demo System for Magpie BBS/Conferencing Software	Steve Manes	New York, NY
MaxiHost Support BBS	(209)836-2402	MaxiHost BBS - small, very easy to run BBS	Don Mankin	San Ramon, CA
McAfee Associates BBS	(408)988-4004	Computer Virus Information - VIRUSCAN and CLEANUP	John McAfee/CVIA	Santa Clara, CA
Meeting Works, The	(212)737-6932	Meeting/seminar/convention planning information	John Mackenzie	New York, NY
METRO Online Entertainment	(212)831-9280	32 line DLX with City Guide/Ski Database - Matchmaker - Chat	Bruce Kamm/Metro Online Services	New York City, NY
Micro Foundry, The	(415)598-0398	2.2 GB Downloads - Your Online Software Source - Boardwatch	Thomas Nelson/Clockwork Software	San Jose, CA
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area	Mike Stroud	Raleigh, NC
Micro Tech BBS	(314)334-6359	Support for OSIRIS Multiline BBS Software - IRIS Mail	Micro Tech	Cape Girardeau, MO
Micromin Technical Support BBS	(206)649-9836	Support for Popular R:Base Relational Data Base System	Micromin Corporation	Bellevue, WA
Microsoft Download BBS	(508)875-8009	HandWare Software for Handicapped - CodeRunner C Utilities	Microsoft Corp/Scott J. Honaker	Framingham, MA
Microsystems Software Inc.	(212)988-5030	Internet Access, E-Mail, Newsgroups, ftp/telet	MSI - Reed Lewis	New York, NY
MindVox	(612)920-5566	Minnesota Space Frontier Society - NASA News	Ben Husset	Minneapolis, MN
MOG-UR'S EMS, The	(818)366-1238	5 Lines - 8 Networks CD-ROMS - 2.8 GB Hub Services HSTN/32	Tom Tompkins	Granada Hills, CA
Mountain Air BBS	(703)427-0226	Adult Based BBS	Edward Lee Wood, Jr.	Roanoke, VA
Movie BBS	(718)939-5462	Movie Reviews and Information - Television	Clarke Ulmer	New York, NY
N.A.C.D. BBS	(912)246-3280	Cave Scuba Diving - Superb Special Topic System	National Assoc. of Cave Divers	Gainesville, FL
N8EMR Ham BBS	(614)895-2553	login:hbbs HAM Radio/AMSAT Unix System - Satellite/Packet	Gary Sanders	Westerville, OH
NAPLPS Graphics BBS	(613)727-5272	NAPLPS Graphics Terminal and Editor Software	MicroStar Corp.	Nepean, Ontario
NASA SpaceLink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Marshall Space Flight Center	Huntsville, AL
Nashville Exchange	(615)383-0727	12 line TBBS - Games/TBBS Software Development 1.8 GB	Ben Cunningham	Nashville, TN
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	National Genealogical Society	Arlington, VA
Necrom Internet Guest System	(408)241-9760	Internet Access System - type "guest" at login for info	Netcom Online Communications	San Jose, CA
Network World Bulletin Board	(508)620-1178	LAN and WAN Issues and Technology	Network World Magazine/CW Communications	Framingham, MA
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Boulder, CO
NoaPix	(303)920-1263	Large Library of Adult GIF Graphics Images	Nick De Wolf	Aspen, CO
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Boulder, CO
NoGate Consulting	(616)530-3392	Home of PAK archive utility	Mike Neuhaus Gus Smedstad	Grand Rapids, MI
Numisnet	(301)498-8205	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Laurel, MD
OAQPSITT	(919)541-5742	Air Quality Planning and Standards Technology Transfer Net	Environmental Protection Agency	Research Triangle Park, NC
OASIS BBS	(404)627-2662	Home of Atlanta Bulletin Board List - ABBL	Robert Orr/Online Atlanta Society	Decatur, GA
Occupational Health/Safety BBS	(212)385-2034	Job Safety Issues for Artists, Musicians, Entertainers	Mike McCann/Center for Safety in Arts	New York, NY
Odyssey	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia, CA
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats -	US Department of Education	Washington, D.C.
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs, CO
Online Now	(807)345-5522	Canada's shareware house is online now	Gary Walsh/Tom Haavisto	Thunder Bay, Ontario
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Norcross, GA
Oracle PC	(610)260-6222	South Australian TBBS Multiline System	Don Crago	Pooraka South Australia
Oracomm Support BBS	(612)894-5879	Sales and Support for Oracomm Multiline BBS Software	Surf Computer Services	Minneapolis, MN
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Naturalist/Ecology Issues	Fran and Norm Saunders	Colesville, MD
Ozone Hole, The	(504)891-3142	Boardwatch-USA Today-Internet-Usenet-RIME	Mike Mathews	New Orleans, LA
P.D.S.O. BBS	(616)938-6722	Home of THE LIST National BBS List	James Toro	Hicksville, NY
PacComm BBS	(813)874-3078	Packet Radio Equipment Supplier - TNC/PSK Modems	Gwyn Reedy/PacCom Inc.	Tampa, FL
PC Ohio	(216)381-3320	Shareware library with 100% USR HST access - 24 lines	Norm Henke	Cleveland, OH
Pennywise	(800)752-3012	Online Office Supply Sales Service	Pennywise	Edmonston, MD
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Univ. of Mass. Dept. of Physics/Astronomy	Amherst, MA
Pinecliff BBS 104/28	(303)642-7463	Large Shareware Library/Echomail Conferences since 1985	Craig Baker	Pinecliffe, CO
Pinnacle Software BBS	(514)345-8654	Support for Sapphire BBS Software	Timothy Campbell/Pinnacle Software	Montreal, Quebec
PKWare BBS	(414)354-8670	Home of PKZIP 1.10 Compression Utility	Phil Katz/PKWare Incorporated	Glendale, WI
Pleasure Dome	(804)490-5878	Sexually Explicit Fantasy Chat System - Adults only	Tom Terrific	Tidewater, VA
Practical Peripherals BBS	(805)496-4445	Support BBS for Practical Peripherals Modems	Practical Peripherals	West Lake Village, CA
ProComm Support BBS	(314)875-0503	Home of ProComm 2.4.3 and ProComm Plus Comm Prgms	Thomas Smith/DataStorm Technologies Inc.	Columbia, MO
Promised Land, The	(317)387-1339	16-Line/2.5GB/11,000+ Files/ WINDOWS, Chat & More	Tim Brown/Computer Solutions	Marshfield, WI
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor	Public Brand Software	Indianapolis, IN
Public Data Network	(503)474-6662	64-line System with \$2.50/hour Local Access	Tony Javoric/Public Data Network	Grants Pass, OR
QMail Deluxe Support BBS	(615)230-8822	Support for QMail Deluxe and 1stReader offline mail utils	Mark (Sparky) Herring	Germentown, TN

Qualitas, Inc. BBS	(301)907-8030	386MAX and BlueMAX Memory Management Software Support	Qualitas Inc.	Bethesda MD
Quarterdeck BBS	(310)314-3227	Technical Support for QEMM, DESQview, all Quarterdeck Prods	Quarterdeck Office Systems	Santa Monica, CA
QuickBBS Support BBS 363/34	(407)896-0494	Product Support for QuickBBS Software	Richard Creighton/Steve Gabrilowitz	Orlando, FL
Random Access Information Svc.	(503)695-3250	11,000 GIF Images - 20,000 DOS/Windows Shareware Files	Janice Stevens	Corbett, OR
Ronlin BBS	(214)938-2840	Traditional File and Message BBS	Chuck Mattern	Red Oak, TX
Rose Media	(416)733-2780	19 GB - Home of Rosemail - Publications/Conferences	Vic Kass	Willowdale, Ontario
Rusty & Edies	(216)726-0737	Large ML PCBoard run by Husband and Wife - NFL/Tradewars	Rusty and Edwina Hardenburgh	Boardman, OH
Sahara Club BBS	(818)933-1899	Land-Use issues, Off-Road, Timber, Conservation	Patrick Martin/Sahara Club	North Hills, CA
Sailing IC BBS	(301)643-1466	National sailing system, yacht racing and clubs, tall ships	Darren Albert	MD
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys	Clark Development Company/David Terry	Murray, UT
San Diego NeXT User's Group BBS	(619)456-2522	Support for NeXT Computers	Brian Dear/San Diego NeXT User's Group	San Diego, CA
SBA Online	(800)697-4636	Advice for Small Business Owners on Financing/Management	Small Business Administration	Washington, DC
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics	National Science Foundation	Washington, D.C.
SDN Project, The 1:14/840	(203)634-0370	The Original Software Distribution Network	Ray Kaliss	Meriden, CT
SEABOARD!	(804)442-6047	Support system for ARC, SEADOG, and AXE software	Seagate/Bill Rudok	Nassawadox, VA
Seagate Technical Support BBS	(408)438-8771	Installation and Specifications for Hard Drive Models	Seachlight Software	Scotts Valley, CA
Searchlight BBS	(516)689-2566	Support system for Searchlight BBS Software	Sammy Mitchell/SemWare Software Products	Stony Brook, NY
SemWare Support BBS	(404)641-8968	Home of QEdit - A Superb Shareware Text Editor	Geason Sackman/NDU	Marietta, GA
SENDIT	(701)237-3283	North Dakota K-12 Educational Net-letnet sendit.nodak.edu	SIG on CD-ROM Applications and Technol.	Fargo, ND
SIGACT BBS	(703)648-4168	CD-ROM/Optical Publishing Info - Lists of Gov. CD Data	Tecnologia Uno Cero S.A. de C.V.	Gaithersburg, MD
Sistema Profesional Informacion	525 590-5988	Largest BBS in Mexico - Spanish Language TBBS	Debit McKay	Mexico City
Skeleton Closet, The	(804)671-8547	Genealogy Programs File Distribution Net 1:27/1/23	Society for Technical Communication	Washington, D.C.
Society for Technical Comm. BBS	(703)522-3299	STC Job Service, Freelance Registry - Technical Writers	Dan Linton	Clinton, MA
Software Creations BBS	(508)368-4137	Home of Apogee Software/Commander Keen Series	Anton Johnson	Fremont, CA
Sonshine Express BBS	(510)651-2440	Family Oriented Christian BBS	Roy Timberman	Gladstone, MO
Sound Advice BBS	(816)436-4516	Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems	Erik VanRiper	Bay Shore, NY
Source for Source, The	(516)968-7824	Clipper/XBase/General Programming File Distribution 107/230	Larry Mundy	Bedford, TX
Spare Parts 1:130/38	(817)540-3527	Windows Distribution Network - Windows utilities/files	Michael Keylin	Brooklyn, NY
Star-Link Network BBS	(718)972-6099	9-nodes, 2.1 GB, link, 75,000 programs	John Land	Sweetwater, TX
Starlink BBS	(915)235-4818	Technical Support for Predictive Maint Customers	Federal Emergency Management Agency	Washington, D.C.
State and Local Emergency Mgmt.	(202)646-2887	Hazardous Materials/National Dam Watch/Emergency Info	Tim Stryker	Davie, FL
Superdemocracy Foundation BBS	(305)370-9376	Online Democracy/Political Culture for the Future	Clinton Herbarium, Buffalo Museum	Buffalo, NY
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation	Bob Baskerville/MMB Development Corp.	Manhattan Beach, CA
TEAMate Unix Bulletin Board	(310)318-5302	Demo/Support for TEAMate BBS Software for Unix	Telebit Corp.	Sunnyvale, CA
Teletip Support BBS	(408)745-3229	Support for Teletip Modems	Chuck Forsberg/Omen Technology Incorp.	Portland, OR
Teleodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM	M&T Publishing	Redwood City, CA
Telex Support BBS	(415)358-8641	DBMS/Dr. Dobbs Journal Magazine Online Service	Jeff Woods/deltaComm Development	Cary, NC
The Back Room	(919)481-9399	Support Service for Telex Communications Software	Fred Kohn	Richmond Hill, NY
The Business BBS	(718)849-1614	America's Largest Exclusively Gay DB - Home of Gaycomm	Jim Appleby	Los Angeles, CA
The File Bank	(303)534-4646	Utilities/Support for Microsoft Windows	Girard Westberg/Brian Bartee	Littleton, CO
The Ledger PCBoard	(818)896-4015	16 Line File Library - Radio Comm/Astronomy - USA Today	Joseph Sheppard	Tulunga, CA
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Ventura Professional Forum	(408)227-4818	Online Weather Forecasts for Any City - Download Radar Data	Western Digital Corporation	Los Angeles, CA
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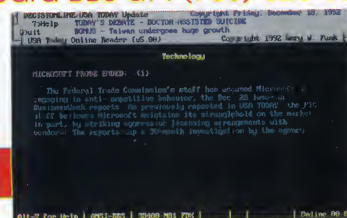
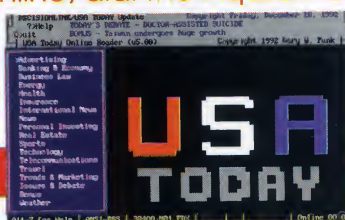
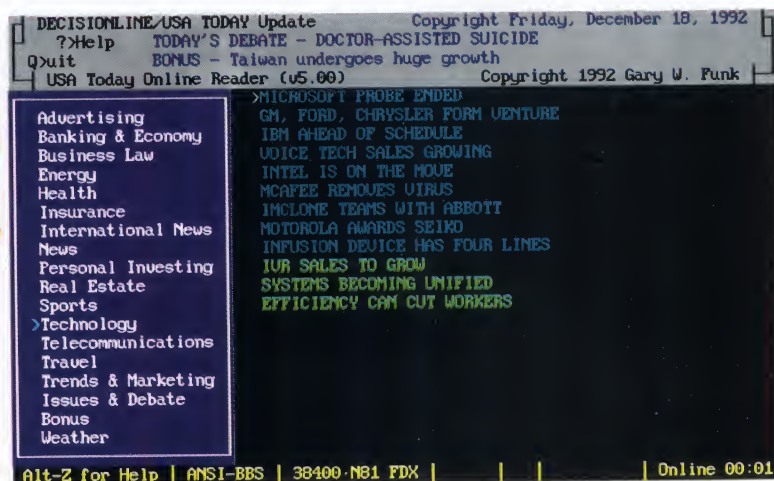
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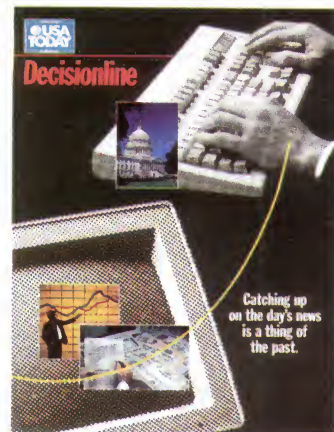
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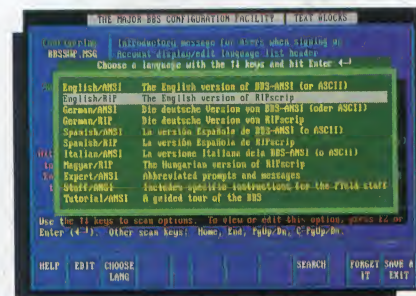
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